



Worcestershire
County Council

Energy and Carbon Management Plan

2016/21

Find out more online:
www.worcestershire.gov.uk



Worcestershire County Council Energy and Carbon Management Plan 2016 – 2021

1) Introduction

Worcestershire County Council (WCC) has been actively addressing energy use and carbon emissions arising from its own estate for a number of years. In the Council's [Future Fit Corporate Plan 2013-17](#) the Environment is one of 4 key priorities, with progress being measured by a reduction in Greenhouse Gas emissions and increasing renewable and low carbon energy generation in the County. The Council itself has a large part to play in this through activity on its own estate. Under the Council's new draft Corporate Plan 2017-2022, we make a commitment to *"encourage and monitor responsible environmental performance by our suppliers and contractors"* and continuing to *"champion the use of appropriate renewable energies, with a focus on energy efficient schemes that make a positive contribution to the environment."*

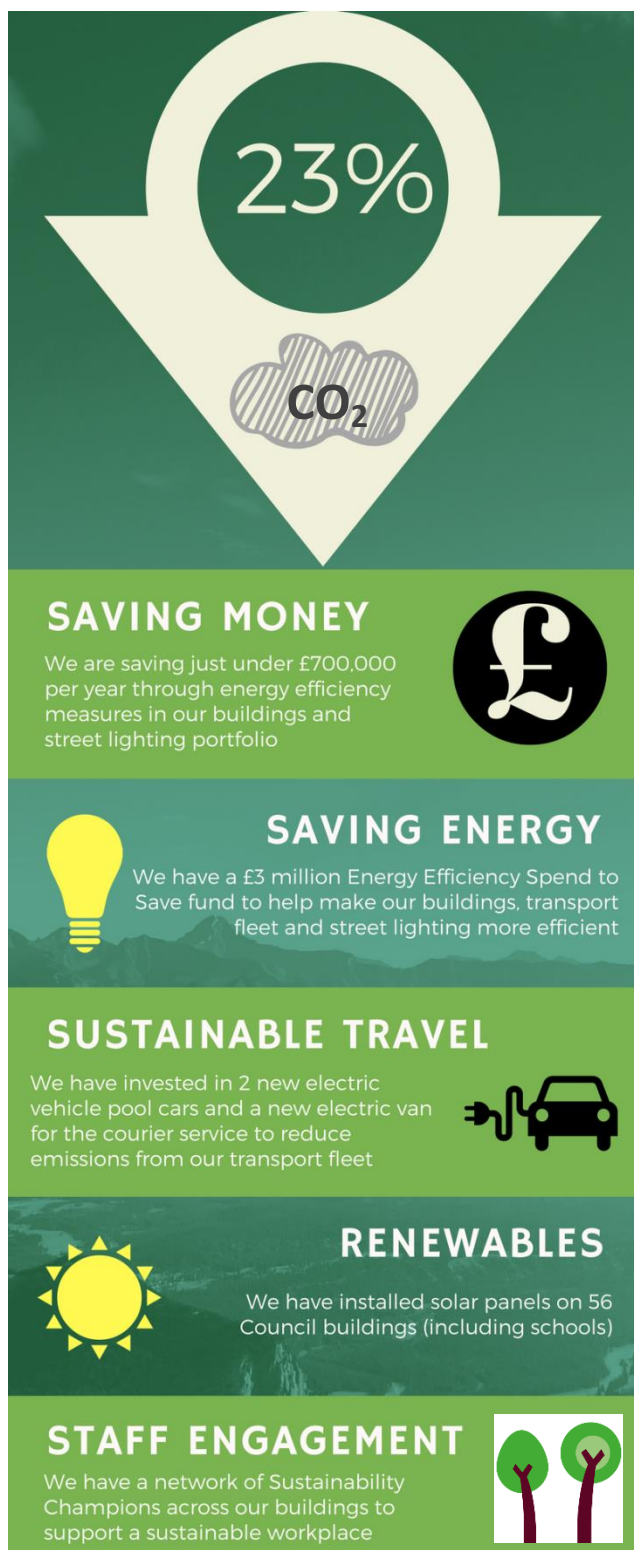


We partnered with the Carbon Trust in 2003 to produce our first Carbon Management Plan (CMP). A 52% reduction in CO₂ emissions was recorded from 2002 to 2008, predominantly achieved through reducing domestic waste sent to landfill, purchasing electricity from renewable sources, improving the energy efficiency of the Council's building stock and increasing the use of renewable energy. In 2010 we again partnered with the Carbon Trust to develop our second CMP. **Our mission then, as it still is now, was to embed energy efficiency, cost savings and CO₂ reduction through our activities and service delivery. In the current financial climate, it is even more necessary for the Council to ensure that we are reducing expenditure on energy and acting to reduce energy costs in the future by investing to save now.** We will continue our journey to being a low carbon local authority, whilst also acting as a community leader and supporting Worcestershire's residents and businesses to reduce their energy consumption and CO₂ emissions, saving them money in the process.

Our second CMP included different aspects of Council services and operations. For example, in the second CMP we did not include CO₂ emissions from waste sent to landfill, (these are covered by our annual Greenhouse Gas (GHG) report), and CO₂ savings associated with purchasing green electricity were no longer classed as 'zero carbon' as they were in the past, since the credit for these savings has already been taken at source. In 2011 we published our second CMP with a stretching and

aspirational target to reduce CO₂ emissions from Council operations and activities by 30% by the end of March 2016.

The Council achieved a reduction of 23% in CO₂ emissions from a 2009/10 baseline by the end of March 2016 through the following projects between 2011 to 2016:



- Spend to Save projects including solar photo voltaic (PV) array installations, lighting improvements and lighting controls, and valve insulation, amongst others
- Introduction of SystemsLink aM&T (automated monitoring and targeting) system to enable us to target and support sites with regard to reducing their energy consumption
- Awareness raising campaigns in corporate buildings
- Street lighting – energy efficient LED replacements, dimming and part-night switch-off
- IT Equipment - shorter timings on IT power down (5 mins inactivity and screen turns off)
- Printer rationalisation and roll-out of SafeCom printing to all offices where possible
- AMR (automated meter reading) smart meter installation and training for corporate buildings and schools
- Voltage optimisation
- Building Energy Management System (BEMS)
- Grey fleet mileage reductions
- Rationalisation of WCC property (Better Use of Property Programme)
- Fuel management and driver training system in WCC fleet buses
- Engagement with Ringway and Severn Waste Services to encourage CO₂ reduction through their fleet vehicles and buildings
- Sustainability Champions at WCC sites

The Council is now saving just under £700,000 per year through energy efficiency measures in WCC buildings and street lighting efficiency. Alongside this, other initiatives are helping to reduce the Council's energy costs, including staff engagement, behaviour change campaigns and smarter energy monitoring.

2) Moving forward – A new sustainable energy and carbon reduction plan

Over the coming years, it is inevitable that we will face increasing energy costs due to rising international prices for fossil fuels, rising network charges and energy company operating costs. DECC projections show energy prices may rise marginally for gas, but significantly for electricity - a projected 20% increase in unit costs of electricity over the 5 year lifetime of this plan. Any activity undertaken now to reduce our outgoings on energy or to increase our renewable energy generation will make us more resilient to these hikes in costs. Alongside utility costs, we are also mandatory participants in the Government's Carbon Reduction Commitment (CRC) Energy Efficiency Scheme, where we are obliged to pay a tax on our carbon emissions from gas and electricity consumed at our corporate sites and through our street lighting portfolio. In 2015/16 we emitted 15,658 tonnes CO₂ under the Scheme and paid £252,094 in CRC tax. Each year, the cost of CRC allowances will increase in line with the Retail Price Index (RPI). The Government have advised that the CRC scheme will be scrapped in 2019, at the end of the current Phase, and will be replaced with an increase in Climate Change Levy (CCL) costs and the introduction of a new reporting regime, to be confirmed in due course. So even though the CRC will come to an end, we will still be obliged to pay additional costs on top of our energy bills associated with the CO₂ that we emit.

2.1 Objectives

The key objectives of this, our third plan to reduce energy consumption and CO₂ emissions from our own activities and operations are:

- **reduce the Council's CO₂ emissions by 20% from 2015/16 baseline**
- **reduce the Council's overall energy consumption and reduce the amount of money spent on energy bills and the carbon tax obligation under the Carbon Reduction Commitment (CRC) Energy Efficiency Scheme**
- develop renewable energy generation, where possible and affordable, to reduce our dependence upon fossil fuels and generate additional income;



- bring together existing and future carbon management projects for the Council's buildings portfolio, street lighting assets, fleet and other transportation activities into a coherent programme;
- encourage cross-Directorate involvement in the identification of opportunities and the implementation of carbon management projects;
- raise the sustainability profile of the Council and lead other organisations, businesses and residents in the County by example;
- form part of the Council's broader Sustainability Action Plan;
- support the ongoing delivery and implementation of the Worcestershire Climate Change Strategy;
- support the objectives of the Environment Priority in the Council's Corporate Plan

2.2 Scope

The scope for the new Energy and Carbon Management Plan (ECMP) will be slightly different from the previous two CMPs. It will cover emissions which the Council is directly responsible for:

- Council owned buildings (excluding schools), to include non-school PFIs where the Council is responsible for them
- Council owned fleet transport
- Street lighting
- Council staff and Members business mileage (grey fleet)

2.3 Out of Scope Emissions - Outsourced and Commissioned Services

The way in which Worcestershire County Council delivers services is changing. In 2013 the Council made the decision to become a commissioning authority and since then has developed the way it commissions services to allow a more innovative approach, whilst delivering excellent services for the people of Worcestershire. The Council fully appreciates that the scope of the new ECMP is not fully inclusive and does not cover all that the Council delivers with the support of outside agencies. The decision to not include all outsourced services within the plan is due to data availability from external sources, and our ability to directly influence energy and carbon reduction in these areas. Much of our service delivery is provided by external service providers, and as we move forward as a commissioning authority this will become more prevalent.

We will continue to develop relationships with organisations that are delivering services on behalf of Worcestershire County Council to ensure that energy and carbon management are addressed by providers, and we will report on emissions from outsourced services, wherever the data is available to do so, though our annual [Greenhouse Gas \(GHG\)](#) report.

2.4 Out of Scope Emissions - Schools

The decision to remove schools from the scope of the new ECMP was taken by the Energy Management Board in January 2016. The Council is going through a significant period of change, and as schools transition to Academy status it is increasingly more difficult to obtain energy consumption data for these sites. We appreciate that schools contribute a significant amount towards our carbon emissions - 48% in 2014/15, and we will therefore continue to collate schools and academy energy

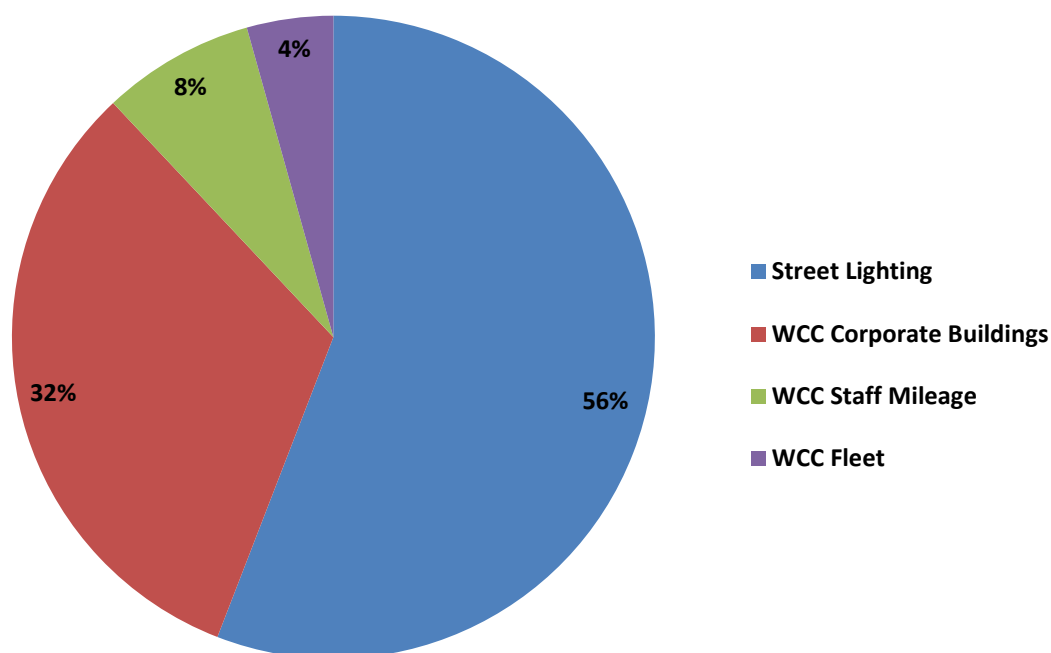
consumption data where we can, and include it within our annual GHG report, which is published on our corporate website. Place Partnership will continue to support and advise schools on energy efficiency and reducing associated carbon emissions through a Service Level Agreement with the County Council (SLA – see Appendix 1), and will support schools wishing to bid for energy efficiency funding, (e.g. Salix – see 'Funding'). The SLA includes support and training for schools in the use of AMR (automated meter reading), technology and the SystemsLink energy management dashboard. WCC will continue to support schools through its Learning for Sustainability Programme, engaging schools through the Eco Schools scheme and focusing efforts around energy reduction through the schools estate.

We will also work closely with the Energy Team at Place Partnership and the Design Team at Jacobs UK to ensure that all of our new build schools and corporate sites are designed to meet stretching energy and carbon targets¹ and that they are fit for the future and resilient to future changes in the climate (for example including Sustainable Drainage Systems – SuDS).

3. Baseline Emissions 2015/16

In 2015/16, WCC emitted 18,105 tonnes CO₂ under the new scope of the ECMP.

Figure 1: 2015/16 baseline CO₂ emissions



Under the ECMP 2016-2021 we will set a target to reduce CO₂ emissions by 20% from a 2015/16 baseline.

A number of the projects from the previous Carbon Management Plan will continue under this new plan. The first set of projects set for implementation are detailed under the Energy and Carbon

¹ Targets for all new build schools to be 35kWh/m² for heat, 35-40kWh/ m² for electricity with an overall carbon target of 22kg/CO₂/m². All new build and refurbishment projects on the corporate building estate will be in line with CIBSE (Chartered Institution of Building Services Engineers) [TM46 Energy Benchmarks](#)

Management Projects Register (ECMPR) 2016-2021 in Appendix 2. These projects will, upon implementation, achieve a 9% reduction in emissions from the baseline – nearly half of the proposed 20% reduction target. The Energy Management Board will need to collate additional projects over the lifetime of the plan to achieve the final target. The target will be very challenging, as many 'quick wins' in relation to energy and carbon reduction have already been achieved over the many years the Council has been actively addressing this agenda.

Total projected cost savings that may be achieved through a 20% reduction in CO₂ emissions total approximately £240,000 per year, based on current energy prices.

4. Energy Management Projects

A number of projects will be delivered over the lifetime of the Energy and Carbon Management Plan in order to realise the objective of reducing the Council's carbon emissions, energy use and associated costs. The Projects Register can be found in Appendix 2 and includes some of the following:

- *Property Asset Rationalisation*
- *Electric fleet vehicles*
- *Communications strategy / campaigns / training for staff*
- *Automated Monitoring and Targeting (AM&T) – SystemsLink and Stark AMR*
- *Spend to Save projects*
- *Street lighting energy efficiency projects*

The expected cost savings from the initial projects detailed in the ECMPR can achieve a 9% reduction in CO₂ emissions and have the potential to save approximately £116,000 per year, on top of the £700,000 per year already being saved through projects under the previous plan.

4.1 Renewable Energy:

In order to support a reduction in the Council's carbon emissions, reduce our dependence upon fossil fuels and increase our resilience with regard to energy and fuel security, the Council will endeavour to continue to increase our renewable energy capacity and installations on corporate assets. We will explore options for further installation of solar PV, ground/air source heat and biomass. We will continue to explore opportunities to increase revenue through the Feed in Tariff (FiTs) and the Renewable Heat Incentive (RHI), where it is feasible to do so. There is also feasibility work underway to establish the viability of a heat network to include County Hall campus, which may develop further over the lifetime of this plan.

5. Funding

We operate our own internal Energy Efficiency Spend to Save programme, which initially started as a £1 million fund in 2010 and has since increased to £3 million today², with further opportunities to develop this under consideration. A total of 108 Spend to Save projects have so far been completed, 56 of which were solar PV projects. The Spend to Save projects are saving just over £300,000 per

² From January 2016 the Energy Management Board took the decision to no longer offer Spend to Save funding to schools. WCC and Place Partnership will support schools that wish to invest in energy efficiency through use of Salix funding

year, including income from the Governments' Feed in Tariff Scheme (FiTs) - a total of £52,815 income was generated through FiTs from solar PV projects on Council properties (including schools) in 2015.

We will also make use of funding available through [Salix](#) - an independent, publicly funded energy company which provides 100% interest-free capital to public sector organisations to improve their energy efficiency and reduce carbon emissions. There may be opportunity to support energy efficiency measures in our properties and street lighting portfolio which can pay-back within 5 years under the Salix programme. In particular we will support schools that wish to apply for Salix funding in order to increase their energy efficiency and reduce carbon emissions if they have projects that can pay-back within 8 years.

We will consider the opportunities that other funding streams may be able to offer to us, such as the Green Investment Bank or European funding opportunities, should we have projects that may be eligible for these potential funding streams.

6. Energy Management Board – Membership

The Council's cross-directorate Energy Management Board has responsibility for overseeing delivery of the Council's energy and carbon related activities, and they will take strategic ownership of the ECMP to ensure effective governance. There is cross-Directorate membership on the Board, which is Chaired by Councillor Anthony Blagg, Cabinet Member for Environment and Deputy Leader of the Council:

Chair: Councillor Anthony Blagg	Cabinet Member for Environment and Deputy Leader of the Council
Katie Bruton	Senior Sustainability Officer
Apryl Pheasant	Energy Manager, Place Partnership
Liz Alston	Sustainability Manager
Scott Downton	Principal Accountant
Neil Anderson	Head of Community Services
Sander Kristel / Peter Bishop (Interim)	Director of Commercial and Change
Ben Horovitz	Principal Planner
Mark Colston	Senior Street Lighting Engineer, Prysmian Group – WCC Street Lighting Contractor
Tim McNicholas	Fleet Transport

The Energy Management Board has responsibility for ensuring the content of the ECMP is deliverable and embedded at organisational level. The Board will continue to meet every 3 months to discuss progress of energy and carbon reduction activities and initiatives and to support the objectives of the ECMP. Any barriers or risks to progress will be escalated to the Board so they can act to remove these and any other issues.

Energy Management Board Terms of Reference:

- 1) Oversee and support implementation of the projects within the ECMP to realise a reduction in corporate energy consumption and costs, and a 20% reduction in corporate CO₂ emissions by 2021
- 2) Ensure any barriers or risks to the Programme are identified and addressed accordingly
- 3) Regularly review the resources (including finances) available to support the implementation of the ECMP and make recommendation for changes to resources to ensure that energy and carbon management projects are implemented
- 4) Review progress of the ECMP at regular intervals over the life of the plan

7. How does WCC buy its energy?

The Council utilises West Mercia Energy (WME) to procure electricity and gas for the majority of our sites and street lighting assets. WME was the first local authority purchasing body to operate fully flexible energy contracts in the public sector (originally known as West Mercia Supplies). They are a purchasing consortium jointly owned by WCC and three other local authorities: Shropshire, Herefordshire and Telford & Wrekin Councils. WME adopt a fully flexible risk managed strategy for energy procurement, with the overall aim to obtain the best available market prices for customers whilst protecting them from risk.

WME manage the energy portfolios for the life of the contracts with the energy supplier. They procure wholesale energy for up to 4 years into the future which allows them to mitigate the risk of a long term rising market. WME utilise fully flexible trading which includes selling back to the market, and they also procure energy throughout the year in order to take advantage of any market falls, which commonly occur closer to the month of consumption. Any benefits captured in falling market prices are shared with customers.

Key features of the WME contract include capped prices at the best available market rate for the financial year; providing budget certainty; no reconciliation or surcharges due to market increases; ability to reduce prices if market prices fall; full bill validation; and query management to point of resolution.

Appendix 1: Service Specification for the Provision of Premises Management Services to Schools

Appendix 2: Energy and Carbon Management Projects Register (ECMPR)

Appendix 1: Place Partnership Service Level Agreement

ENERGY MANAGEMENT:

The Energy Team provide support and assistance in monitoring and reducing energy consumption and costs in schools. The service available and benefits to you can include:

- Identifying energy saving opportunities through detailed site survey and data analysis.
- Advice on energy use, efficiencies, technologies and supply
- Data Collection – We manage a smart metering contract that you will have access to that collects data from your electricity and gas meters to ensure accurate billing. This can also avoid you having to source a data collection service or data logger.
- Access to Place Partnership's IT based energy management dashboard updated daily containing site specific current and historic energy costs and consumption, for identification of energy savings, budget setting, performance tracking and fulfilling Eco-school's Green Flag monitoring criteria.
- Assistance with business case and applications to access funding to install energy efficient measures and renewable technology. We have already supported over 70 schools in accessing £1.4M worth of renewable and energy efficient technology funding.
- Support and advice with energy legislative changes
- Available funding support and advice. You can benefit from our substantial up to date knowledge of energy use reduction funding availability suitable for schools
- Support in identifying energy savings/wastage, benchmarking, tracking performance and fulfilling Eco-school's Green Flag monitoring criteria through the use of data.
- Access to our nationally tendered DEC contract enabling you to purchase your Display Energy Certificates at a much reduced rate. Our team can also reduce your admin time by collating supply energy data in the required format to the Assessor.



BUILDING ENERGY MANAGEMENT (BEMS)

The Building Energy Management System (BEMS) Team at Place Partnership can remotely control and optimise heating, hot water and ventilation plant and systems (extent depends on what is installed in your school).

The benefits to you are:

- Remote monitoring of control system alarms so that these can be dealt with quickly, avoiding potential loss of heating / hot water and associated school closures.
- Remote time and temperature control of heating and hot water systems. We can remotely alter time settings specific to your school for you in advance for terms, holidays or lettings. If not set by a controls specialist using correct software your heating may continue to run during unoccupied periods/ holiday dates resulting in higher energy bills
- Without effective controls and monitoring your energy costs may increase significantly, by as much as 25%.
- Adjustments to BEMS strategy are made remotely to help reduce energy use and costs
- Place Partnership have the necessary specialist training and skills to manage your BEMS and also have an agreement for further support that you can benefit from direct with controls manufacturers Trend and Schneider.
- Avoid the significant costs necessary for the appropriate equipment, software, technical ability, time, training and support of trying to control your BEMS yourselves or using a third party.
- A BEMS Emergency/out of hours contact number for BEMS Staff is provided to deal with emergency issues.



Please contact us if you need this document in another format,
or if you have any questions.

Phone: **01905 846061**

Email: **sustainability@worcestershire.gov.uk**

Write to: **Sustainability Team**
Worcestershire County Council
County Hall
Worcester
WR5 2NP



Find out more online:
www.worcestershire.gov.uk

