

Coventry City Council's
Carbon Management Plan
2014 Revision

Approved 20th October 2014

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1.0 Introduction

Coventry City Council is determined to lead the city to a sustainable and low-carbon future that will ensure that residents, visitors and businesses choose Coventry as a preferred location in which to live, work and invest. However a sustainable and low carbon future won't happen by chance, it will require a concerted effort by those organisations that influence energy consumption and resource use in Coventry.

The City Council has a duty to lead by example. It is a major employer and consumer of resources within the city. It operates from a varied portfolio of over 200 assets comprising of council offices, libraries, care homes, car parks, operates a fleet of around 320 vehicles, and is also responsible for street lighting.

During the 2013/14 financial year the energy required to operate these buildings, vehicles and provide street lighting amounted to around:

- 27.3 million kWh of electricity costing £2.8 million
- 17.1 million kWh of gas costing £510,000
- 0.12 million kWh of heating oil costing £7,500
- 1.3 million litres of fuel costing £1.5 million

In September 2009 a Carbon Management Plan (CMP) for the City Council was approved, by the then Cabinet Member for (Climate Change, Housing and Sustainability), which set an aspirational target of reducing the Council's carbon dioxide emissions by 30% over five years.

The City Council has had moderate success in reducing carbon dioxide emissions from its operations but will not achieve the 30% aspirational target.

The five year delivery period for the CMP ended in March 2014 and the City Council reduced its carbon dioxide emissions by 27%.

This document forms the revised CMP for Coventry City Council. It details progress made so far and sets the agenda and carbon targets for the next six years.

The plan will require significant investment by the City Council; on-going rationalisation of the estate; efficient use of space and other resources, together with effective management of stakeholder behaviours relating to energy consumption.

The CMP will constantly evolve, and by means of an annual, formal evaluation of its success, will improve its effectiveness and ensure relevance as the Council adapts to internal and external pressures and leads the way in achieving a sustainable and low carbon future.

2.0 Context

All organisations have a responsibility to respond to the threat of climate change especially those having a significant influence on energy consumption.

Leadership is needed at both the national and local level to meet UK energy and climate change objectives: saving residents and businesses money on energy bills, generating income from local energy schemes (including renewable) and driving growth through investment and jobs in green industries.

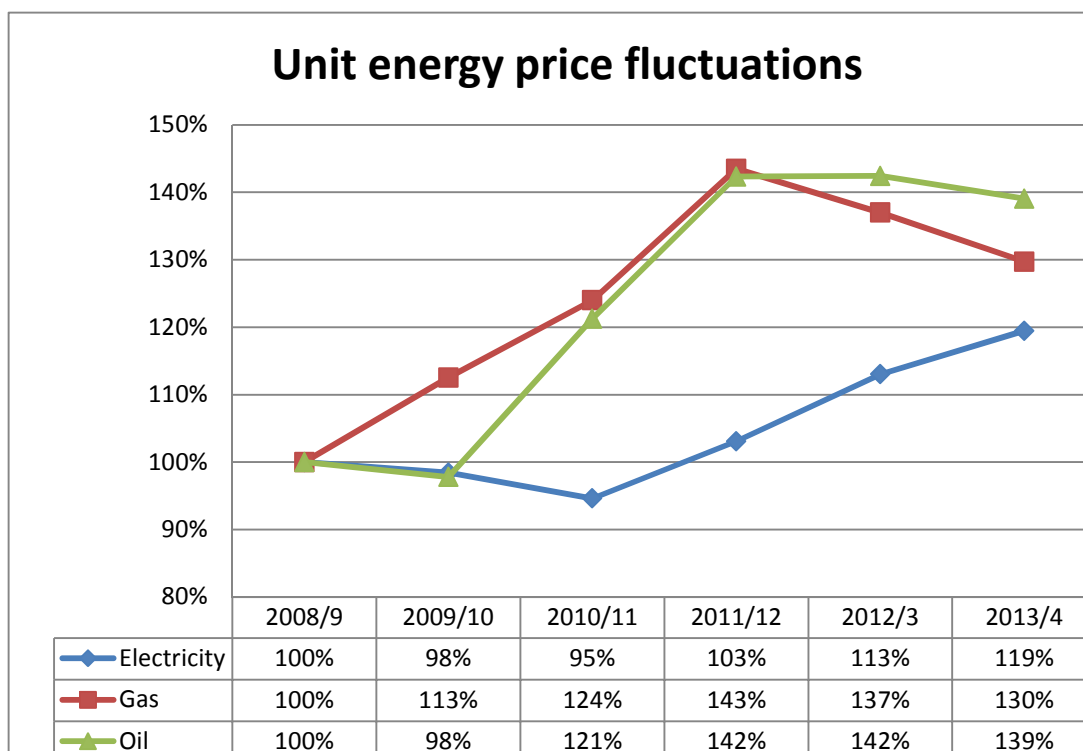
Coventry City Council therefore has a pivotal role in tackling climate change and is party to a **memorandum of understanding** (MOU) between the Local Government Association and the Department of Energy and Climate Change (DECC) to do its bit in achieving the national greenhouse gas emissions reduction target.

The MOU requires all councils to take firm action to:

- Reduce the carbon emissions from their own estate and operations;
- Reduce carbon emissions from homes, businesses and transport infrastructure, creating more, appropriate renewable energy generation, using council influence and powers; and
- Participate in national carbon reduction initiatives at the local level, particularly the roll out of the Green Deal, smart metering and renewable energy deployment.

Energy and fuel prices have fluctuated widely over recent years with the overall trajectory being upwards – this has caused significant pressures on budgets. For example, a 10% rise in electricity prices increases the City Council's bill by £330,000 and for every penny that petrol or diesel goes up the annual fleet fuel cost increases by £13,000. Reducing spend on energy and fuel contributes to delivering the **Council Plan** priority of reducing operating costs (low carbon).

The graph overleaf shows the unit cost energy paid by the City Council. The unit price of electricity, gas and oil has increased since 2008/9 by 19%, 30% and 39% respectively and the trend for further price rises is anticipated to continue.



The Carbon Reduction Commitment Energy Efficiency scheme (CRC-EES) is a statutory scheme which requires councils and other large users of energy to buy allowances for their emissions of carbon. The cost of allowances for phase I of CRC-EES was £12 for every tonne of carbon emitted. During the 2013/14 financial year the cost of allowances to the council was nearly £130,000 in carbon tax.

The CRC-EES is supported by a legal framework with legal penalties and fines for:

- Non participation
- Failure to report on time
- Heavy fines and imprisonment for deliberate misreporting and / or falsification of data.

Phase II of the CRC-EES runs from 2014/15 to 2018/19. The cost of carbon allowances for this phase has increased to £16 per tonne.

For phase II, the Department of Energy and Climate Change decided to remove schools from the scope of local authorities CRC-EES buildings portfolio. This takes the City Council's energy consumption to below the threshold for inclusion into phase II of the scheme.

Phase III starts 2019/20. There is a risk, as a result to moving to Friargate, that the City Council's energy consumption will exceed the CRC-EES threshold and therefore the City Council will be once again be required to comply. Delivery of this CMP minimises the risk of the Council being included in future phases of the CRC-EES.

Energy Act 2011. Makes provision for legislation to be implemented before April 2018 making it unlawful for Landlords to let properties which fall below a prescribed level of energy efficiency.

At this moment in time, the Department of Energy and Climate Change (DECC) and the Green Deal Impact Assessment websites are suggesting that an Energy Performance Certificate E rating will become the minimum acceptable level.

Just short of 20% of council owned commercially rented properties requiring an Energy Performance Certificate are rated below level E.

Display Energy Certificates: There is a legal requirement for all public sector buildings with a total useful floor area of over 500m², to show a Display Energy Certificate (DEC) in a prominent place, clearly visible to the public. The number of City Council buildings requiring DEC's is 35.

3.0 Scope, baseline emissions and reductions achieved to date.

To demonstrate that reductions in carbon emissions are being achieved it is essential that the level of emissions from the City Council's activities is measured. The baseline emissions are used as a marker to monitor the City Council's improvement over the duration of the carbon management plan.

3.1 Scope

As carbon management has evolved nationally and locally the City Council has been required to adopt and report on a number of carbon footprints with differing scopes, meaning that differences have arisen as to what is to be included. The box below summarises the various carbon footprint scopes for Coventry City Council.

Carbon footprinting scopes

Current reporting scopes related to carbon management for Coventry City Council are:-

- **Carbon Reduction Commitment.**
 - Electricity and gas only.
 - Operational property includes un-let commercial property.
 - Schools excluded from April 2014

- **Greenhouse Gas Emissions Reporting**
 - Gas, electricity, heating oil and fuel.
 - Council operational property, fleet, business travel, street lighting and selected outsourced services.
 - Excludes un-let commercial property.
 - Schools excluded from April 2014.

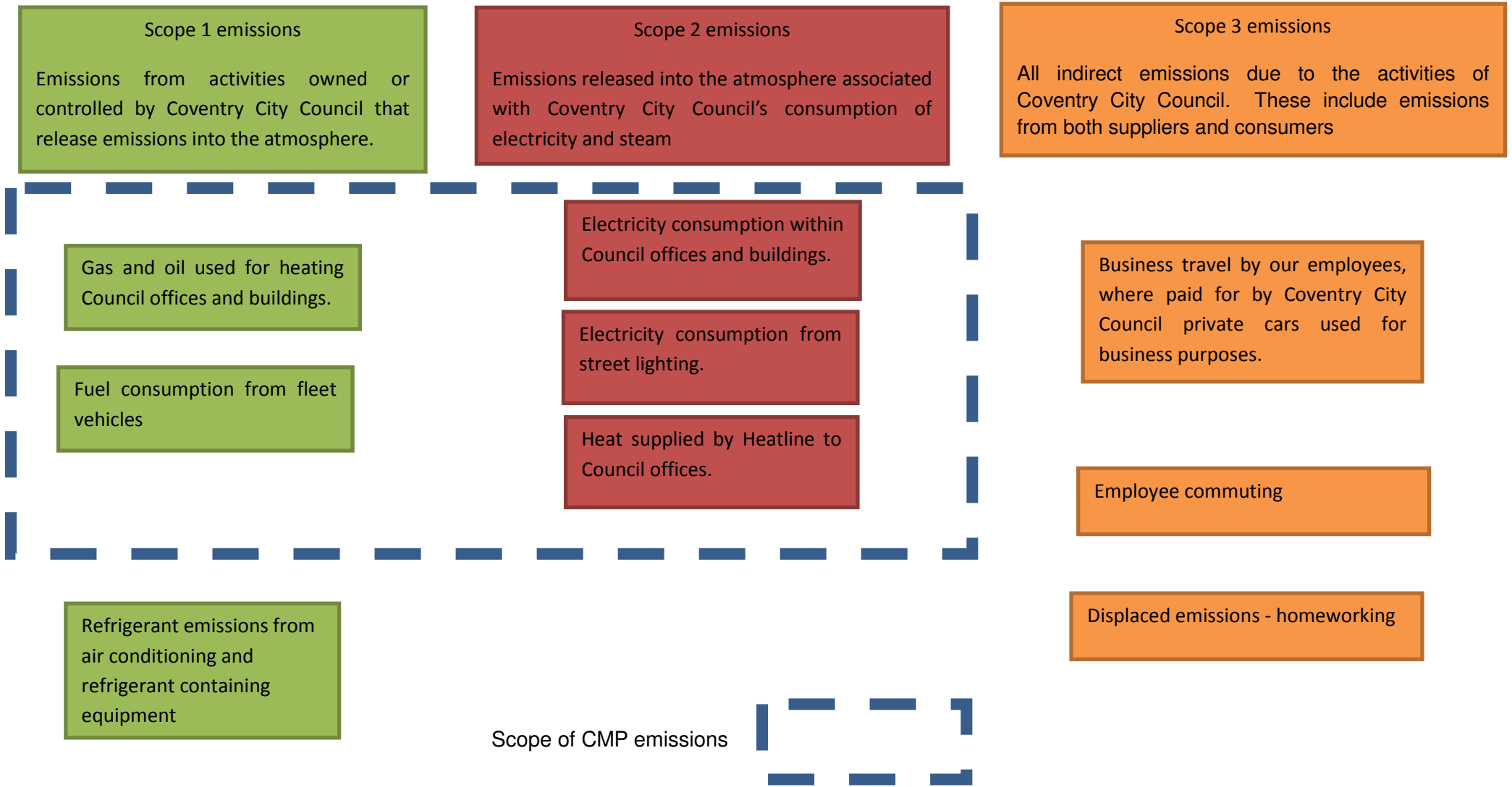
- **Carbon Management Plan 2009**
 - Gas, electricity, heating oil and fuel.
 - Council operational property, schools, fleet, business travel and street lighting.
 - Excludes un-let commercial property.

- **Council's Corporate report.**
 - Same scope as Greenhouse Gas Emissions Report.

To simplify the carbon footprinting process and bring consistency to reporting the City Council's carbon footprint the scope of the Carbon Management Plan has been revised to cover scope 1 and scope 2 emissions (excluding schools) of the Greenhouse Gas Emissions report.

The figure overleaf specifies carbon footprint scope of the revised Carbon Management Plan.

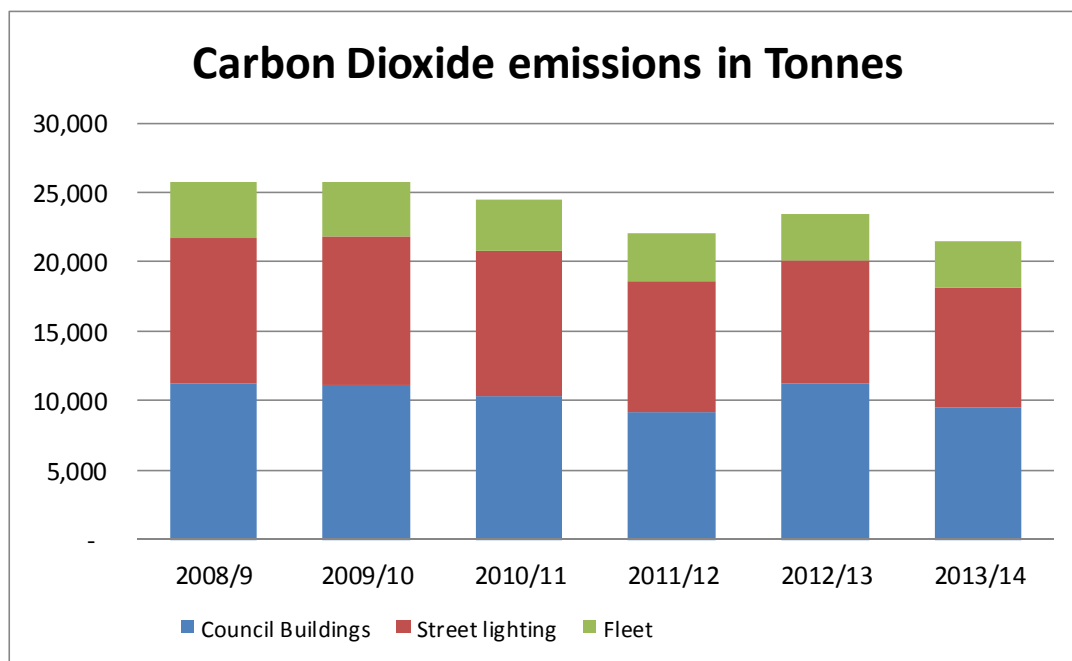
Scope of Emissions within Carbon Management Plan



3.2 Baseline and measured emission reductions

The City Council began reporting to the Department of Energy and Climate Change its Carbon footprint in 2008/9. This has therefore been chosen as the baseline year for this CMP.

The graph below gives the carbon dioxide emissions measured from Council buildings, street lighting and fleet operations since the 2008/9 financial year.



| Year | 2008/9 (t CO2e) | 2009/10 (t CO2e) | 2010/11 (t CO2e) | 2011/12 (t CO2e) | 2012/13 (t CO2e) | 2013/14 (t CO2e) | % change |
|-------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------------|
| Council Buildings | 11,230 | 11,081 | 10,351 | 9,220 | 11,289 | 9,094 | 19% |
| Street lighting | 10,516 | 10,712 | 10,400 | 9,372 | 8,786 | 6,452 | 39% |
| Fleet | 4,050 | 3,940 | 3,734 | 3,475 | 3,416 | 3,407 | 16% |
| Total | 25,796 | 25,733 | 24,484 | 22,067 | 23,490 | 18,953 | 27% |

The last reporting period, 2013/14, indicated a reduction in total emissions of 27% compared with the baseline year of 2008/9. Emissions from Council Buildings, Street lighting and Fleet all reduced significantly.

Carbon dioxide emissions from building are weather dependant. The large increase in emissions for the period 2012/13 was primarily due to the extreme period of cold weather experienced over 2012/13 which saw a 24% increase in demand for heating compared to the 20 year average.

4.0 Achievements and challenges.

The reduction in carbon dioxide emissions has been achieved through a variety of measures, the most notable being:

Replacement of Street lighting: In 2010 a 5 year programme to improve the street lighting in Coventry began. When finished over 30,000 lighting columns will be replaced or upgraded with more efficient lamps and 6,500 illuminated signs / bollards / beacons will have been replaced with low wattage LED lights or de-illuminated when possible. Energy and carbon dioxide savings of 38% are expected.

Three years into the improvement programme, the energy used by street lighting has already been reduced by 32% and carbon dioxide emissions by 39%.

Heatline: is a major new scheme to harness energy at the waste to energy plant in Whitley. The surplus energy is turned into hot water which is transported via a network of underground pipes to provide heat and hot water to eight prominent city centre buildings which include the Council House and Civic Centres 1 - 4. Heatline became operational in September 2013.

Estimated carbon dioxide savings made by heating the Council House and Civic Centre 1 - 4 using Heatline will be 650 tonnes per year.

Lighting schemes: The City Council has taken advantage of developments in low energy lighting to reduce its energy consumption. Most central council offices have benefited from lighting upgrades.

For example energy consumption in Civic Centres 1 and 4 has reduced per year by around 150kWh since 2008/9; this reduction is predominantly due to modernisation of lighting which has avoided energy costs by over £13,000 and reduced carbon dioxide emissions by 83 tonnes per year.

Property rationalisation: An on-going review of the council's property needs and the subsequent rationalisation of council operational building stock has reduced the City Council's carbon footprint significantly. The property rationalisation process will continue due to the move to purpose built Council offices at Friargate.

For example the closure of Casselden House, West Orchard House, Stoke House and Elm Bank Training centre avoided energy costs of around £84,000 per year and reduced carbon dioxide emissions by approximately 500 tonnes per year.

Low carbon vehicles: The City Council currently runs a fleet of around 320 vehicles which range from heavy duty gritting and refuse collection vehicles to light commercial and passenger carrying vehicles.

The fleet includes 58 Low Emission Vehicles (6 electric, 43 hybrid and 9 diesel low carbon vehicles), one of the largest low emission local authority fleets in the country. The replacement of fleet vehicles with lower emission alternatives, route optimization and an extensive programme of smart driver training for fleet vehicle drivers has reduced the fleet fuel consumption and carbon emissions by 16%.

The **Green Champions** network is an established, influential group of staff who are helping to drive our low carbon and resource efficiency agenda within the Council. Green Champions are helping the Council to:

- Reduce the amount of energy we use
- Reduce the amount of resources we use and increase the percentage of waste that is recycled
- Reduce the amount of water we use
- Lower our carbon footprint
- Promote green travel such as walking and cycling

Challenges

The reduction in energy and fuel consumption and hence carbon emissions has been achieved despite very challenging conditions.

- In particular due to the uncertainty around the long term use of Council office accommodation it has been prudent to mainly focus on properties the Council is certain to occupy after the move to Friargate. This has limited the energy efficiency measures that could be implemented to those having little or no cost and demonstrating business cases with rapid pay back.
- The economy has been in a prolonged period of decline and funding to the City Council has been significantly cut. Money to invest in energy efficiency measures has experienced similar budgetary pressures.

5.0 Revised objectives & targets

The original CMP set an aspirational target of 30% reduction within 5 years. This target was based on guidance from the Carbon Trust and is in proportion to carbon reduction targets set by other councils. The actual carbon reduction at the end of the 5 year period was 27% against the 2008/9 baseline.

The Memorandum of Understanding between the Local Government Association and the Department of Energy and Climate Change indicates local authorities should play their part in achieving national carbon reduction targets. The national target is 34% reduction by 2020 against a 1990 baseline. Nationally carbon emissions reduced by 11% between 1990 and 2007 therefore between 2008 and 2020 a further 23% reduction is required to achieve the national target.

The UK also has a target to produce 15% of its energy requirements from renewable sources by 2020.

The objectives set in this CMP are challenging but achievable and reflect the City Council commitment to leading the low carbon agenda in Coventry.

Objective:

To exceed the UK's 2020 carbon dioxide emission reduction and renewable energy targets by reducing the City Council's carbon dioxide emissions by at least 23% based upon a 2008/9 baseline and have at least 15% of our energy demand met through renewable energy by 2020.

The carbon dioxide emissions profile overleaf shows the projected carbon dioxide emissions reductions and percentage change expected up to 2020.

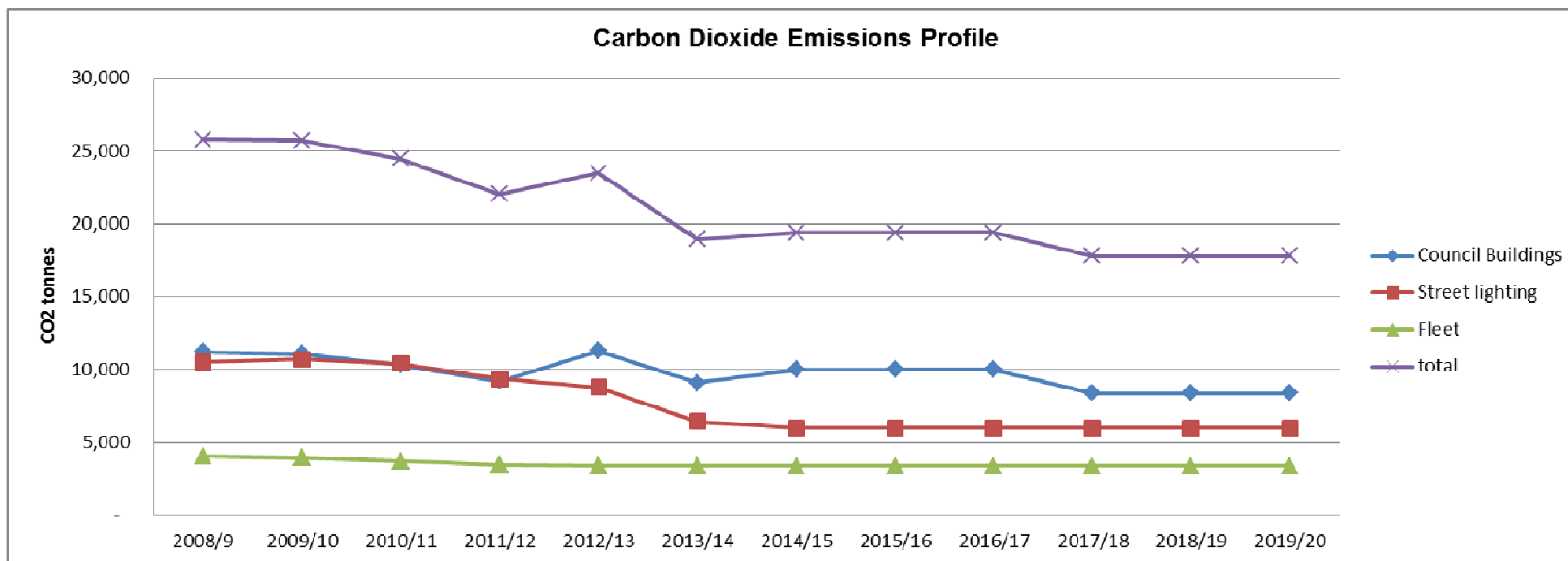
Targets:

2008/9 to 2016/7.

- CO₂ reduction target of 27%. Equivalent to a reduction of 6,900 tonnes against the baseline.
- Renewable target of 3%. Equivalent to 600 tonnes of carbon dioxide emissions being offset through the supply of renewable energy.

2008/9 to 2019/20.

- CO₂ reduction target of 35%. Equivalent to 9,000 tonnes reduction against the baseline.
- Renewable target of 15%. Equivalent to 2,500 tonnes of carbon dioxide emissions being offset through the supply of renewable energy.



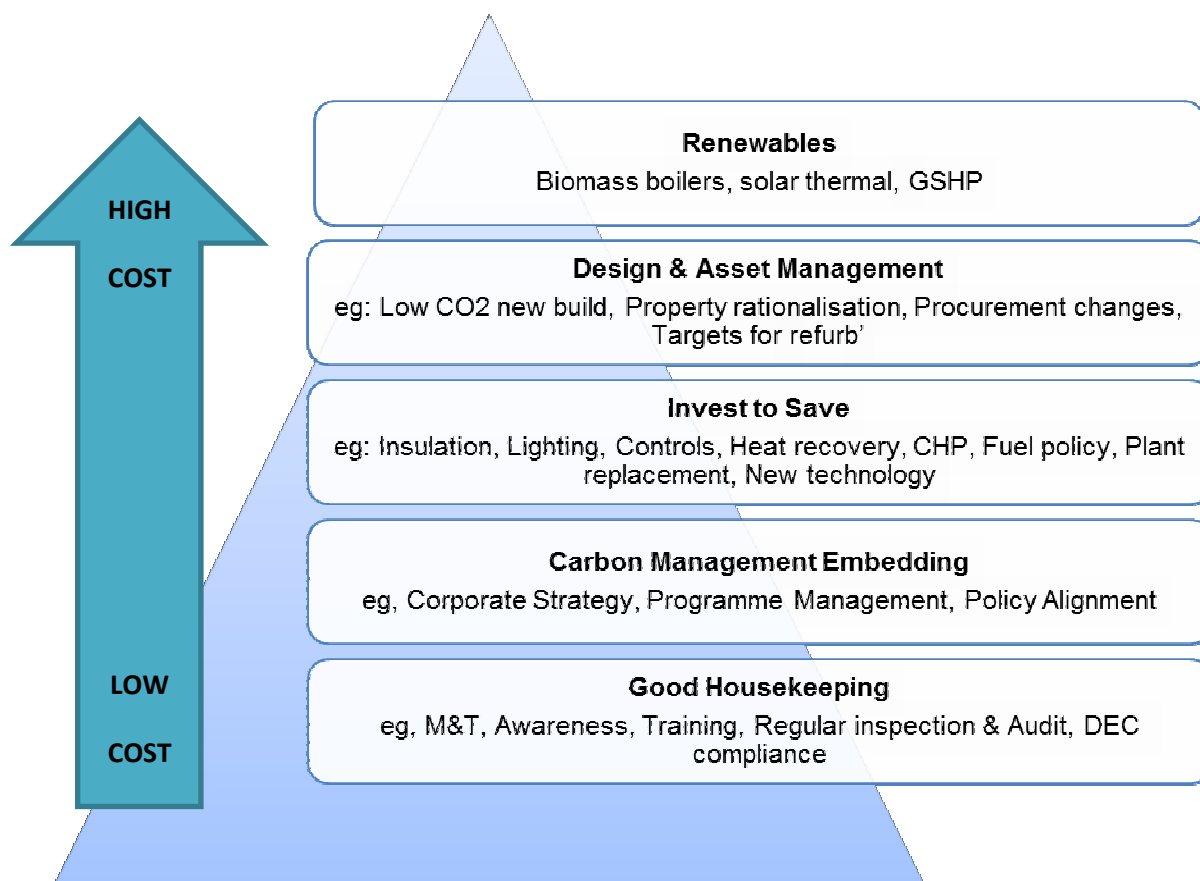
| | 2008/9 | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|--------------------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Council Buildings* | 11,230 | 11,081 | 10,351 | 9,220 | 11,289 | 9,094 | 10,000 | 9,500 | 9,500 | 7,900 | 7,900 | 7,600 |
| Street lighting* | 10,516 | 10,712 | 10,400 | 9,372 | 8,786 | 6,452 | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 | 5,900 |
| Fleet* | 4,050 | 3,940 | 3,734 | 3,475 | 3,416 | 3,407 | 3,400 | 3,400 | 3,400 | 3,400 | 3,400 | 3,300 |
| Total* | 25,796 | 25,733 | 24,484 | 22,067 | 23,490 | 18,953 | 19,400 | 18,900 | 18,900 | 17,300 | 17,300 | 16,800 |
| % reduction | 0 | 0 | 5 | 14 | 9 | 27 | 25 | 27 | 27 | 33 | 33 | 35 |

| UK national target | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 23 |
|--------------------|---|---|---|---|---|----|----|----|----|----|----|----|
| % reduction | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 23 |

*Actual figures for period 2008/9 to 2013/14. Forecast figures for 2014/15 to 2019/20.

6.0 Carbon Management Priorities

The Low Carbon - Energy management Pyramid below defines the sequence of energy management activities to be adopted to ensure cost effective solutions are considered first. Good housekeeping and carbon management embedding measures generally being the most cost effective as they require little or no cost to implement.



The Council's main carbon management priorities based on the low carbon – Energy Management pyramid are:

Good Housekeeping

- Roll out of gas and electricity automatic meters to support better monitoring, targeting and control of energy.
- Enhancing the network of Green Champions

Carbon Management Embedding

- Improve the carbon management performance by embedding carbon management measures as defined by the Carbon Trust's Carbon Management Matrix (see page 15).
- Implementation of an energy management system compliant with the requirements of the international energy management standard ISO 50001.

The Carbon Management Embedding Matrix is a tool provided by the Carbon Trust to assess to what extent carbon management practices are embedded into council operations. Using the Carbon Management Embedding Matrix members of the

Carbon Management Team evaluated the council's current embedding performance against each of the seven criteria. The target level of embedding performance to be achieved within 3 years was also determined.

The table at the top of the Carbon Management Embedding Matrix gives the results of the Carbon Management Embedding exercise.

Invest to Save

- Further implementation of invest to save measures. In particular using an Energy Performance Contract model (RE:FIT framework contract) to deliver a series of energy efficiency improvements across a selected portfolio of council operational properties. Typical Energy Performance Contracts include around 8-10 buildings requiring investment of over £500,000 that pay back within 7 years. Savings are guaranteed by the Energy Service Company contracted to deliver the energy savings.

Design and Asset Management

Kickstart is the major project that will see the City Council move to a new home and a new way of working. By the end of 2016 thousands of staff will be moving out of many of our current offices into the new building at Friargate. This smaller estate will reduce the City Council's carbon footprint from its office estate largely as a result of constructing the new building at Friargate to a BREEAM excellent status which will be heated and cooled using the Heatline scheme.

Investment in renewable energy

- Renewables: Heatline will be the main source of heating and hot water for our office buildings from October 2013 onwards. The burning of biomass waste is considered a renewable form of energy. Investment in other renewable technologies such as Solar PV and Biomass boilers, and heat pumps will be considered when the business case indicates an acceptable return on investment.
- To explore the opportunity for the Energy from Waste Plant to supply electricity to the Council via 'Licence-Lite' agreement.

6.1 Monitoring progress of projects.

To monitor the delivery of carbon reduction projects a Carbon Management Plan Project Register has been created. This details a mix of behavioural, energy efficiency and renewable energy projects that have been implemented or are planned to be implemented to reduce the council's carbon dioxide emissions associated with council property, street lighting and fleet. The project register is a live document which is regularly updated. The current version is given in Appendix 1.

Carbon Trust's Carbon Management Embedding Matrix

| Present | 3.5 | 2.5 | 3.5 | 4.5 | 4.5 | 5 | 3 |
|-----------------------------|--|--|---|---|---|--|---|
| Target | 4.5 | 4 | 4.5 | 4.5 | 4.5 | 5 | 4 |
| | CORPORATE STRATEGY | PROGRAMME MANAGEMENT | RESPONSIBILITY | DATA MANAGEMENT | COMMUNICATION & TRAINING | FINANCE & INVESTMENT | POLICY ALIGNMENT * |
| BEST 5 | <ul style="list-style-type: none"> • Top level target allocated across organisation • CO₂ reduction targets in Directorate Business Plans | <ul style="list-style-type: none"> • Cabinet / SMT review progress against targets on quarterly basis • Quarterly diagnostic reports provided to Directorates • Progress against target published externally | <ul style="list-style-type: none"> • CM integrated in responsibilities of senior managers • CM part of all job descriptions • Central CO₂ reduction advice available • Green Champions leading local action groups | <ul style="list-style-type: none"> • Quarterly collation of CO₂ emissions for all sources • Data externally verified • M&T in place for: <ul style="list-style-type: none"> ○ buildings ○ street lighting ○ waste | <ul style="list-style-type: none"> • All staff given formalised CO₂ reduction: <ul style="list-style-type: none"> ○ induction and training ○ communications • Joint CM communications with key partners • Staff awareness tested through surveys | <ul style="list-style-type: none"> • Finance committed for 2+ yrs of Programme • External funding being routinely obtained • Ring-fenced fund for carbon reduction initiatives | <ul style="list-style-type: none"> • CO₂ friendly operating procedure in place • Central team provide advice and review, when requested • Barriers to CO₂ reduction routinely considered and removed |
| 4 | <ul style="list-style-type: none"> • CO₂ reduction commitment in Corporate Strategy • Top level targets set for CO₂ reduction • Climate Change Strategy reviewed annually | <ul style="list-style-type: none"> • Sponsor reviews progress and removes blockages through regular Programme Boards • Progress against targets routinely reported to Senior Mgt Team | <ul style="list-style-type: none"> • CM integrated in to responsibilities of department heads • Cabinet / SMT regularly updated • Staff engaged though Green Champion network | <ul style="list-style-type: none"> • Annual collation of CO₂ emissions for: <ul style="list-style-type: none"> ○ buildings ○ street lighting ○ transport ○ waste • Data internally reviewed | <ul style="list-style-type: none"> • All staff given CO₂ reduction: <ul style="list-style-type: none"> ○ induction ○ communications ○ CM matters communicated to external community | <ul style="list-style-type: none"> • Coordinated financing for CO₂ reduction projects via Programme Board • Finances committed 1yr ahead • Some external financing | <ul style="list-style-type: none"> • Comprehensive review of policies complete • Lower level policies reviewed locally • Unpopular changes being considered |
| 3 | <ul style="list-style-type: none"> • CO₂ reduction vision clearly stated and published • Climate Change Strategy endorsed by Cabinet and publicised with staff | <ul style="list-style-type: none"> • Core team regularly review CM progress: <ul style="list-style-type: none"> ○ actions ○ profile & targets ○ new opportunities | <ul style="list-style-type: none"> • An individual provides full time focus for CO₂ reduction and coordination across the organisation • Senior Sponsor actively engaged | <ul style="list-style-type: none"> • Collation of CO₂ emissions for limited scope i.e. buildings only | <ul style="list-style-type: none"> • Environmental / energy group(s) given ad hoc: <ul style="list-style-type: none"> ○ training ○ communications | <ul style="list-style-type: none"> • A view of the cost of CO₂ reduction is developing, but finance remains ad-hoc • Some centralised resource allocated • Finance representation on CM Team | <ul style="list-style-type: none"> • All high level and some mid level policies reviewed, irregularly • Substantial changes made, showing CO₂ savings |
| 2 | <ul style="list-style-type: none"> • Draft Climate Change Policy • Climate Change references in other strategies | <ul style="list-style-type: none"> • Ad hoc reviews of CM actions progress | <ul style="list-style-type: none"> • CO₂ reduction a part-time responsibility of a few department champions | <ul style="list-style-type: none"> • No CO₂ emissions data compiled • Energy data compiled on a regular basis | <ul style="list-style-type: none"> • Regular awareness campaigns • Staff given CM information on ad-hoc basis | <ul style="list-style-type: none"> • Ad hoc financing for CO₂ reduction projects | <ul style="list-style-type: none"> • Partial review of key, high level policies • Some financial quick wins made |
| 1 Worst | <ul style="list-style-type: none"> • No policy • No Climate Change reference | <ul style="list-style-type: none"> • No CM monitoring | <ul style="list-style-type: none"> • No recognised CO₂ reduction responsibility | <ul style="list-style-type: none"> • No CO₂ emissions data compiled • Estimated billing | <ul style="list-style-type: none"> • No communication or training | <ul style="list-style-type: none"> • No specific funding for CO₂ reduction projects | <ul style="list-style-type: none"> • No alignment of policies for CO₂ reduction |

7.0 Financing Energy Efficiency and Low Carbon measures

Key to delivering energy efficiency low carbon measures is the availability of funding to allow the projects to be carried out.

There are a number of sources of funds that are available to support energy efficiency low carbon measures.

Salix is a government-backed institution that offers interest free capital finance to public sector organisations to install energy efficiency measures. The savings in energy made as a result of the investment are used to pay back the loan. Projects with payback periods generally less than five years are fundable through a Salix loan.

Typical measures funded include:

- Fitting more efficient lighting, such as LED and T5 lamps
- Installation and upgrading of building energy management systems
- Improvements to heating systems, such as implementing heat recovery and switching from oil to gas boilers
- Building fabric insulation improvements, such as cavity wall and loft insulation

Coventry City Council has used Salix funding to finance mainly lighting upgrade projects and has access to a Salix fund of £200,000.

Energy Performance Contracts are an alternative financing mechanism designed to accelerate investment in cost effective energy saving or renewable energy measures in non-domestic property portfolios. An Energy Performance Contract provider typically conducts a comprehensive energy audit for the client, then designs and constructs a project that meets the client's needs and arranges the necessary financing. The Energy Performance Contract provider guarantees that the improvements will generate energy cost savings sufficient to pay for the project over the term of the contract. After the contract ends, all additional cost savings accrue to the client. Typically Energy Performance Contracts provide a means of funding energy efficiency measures with longer paybacks than Salix funding.

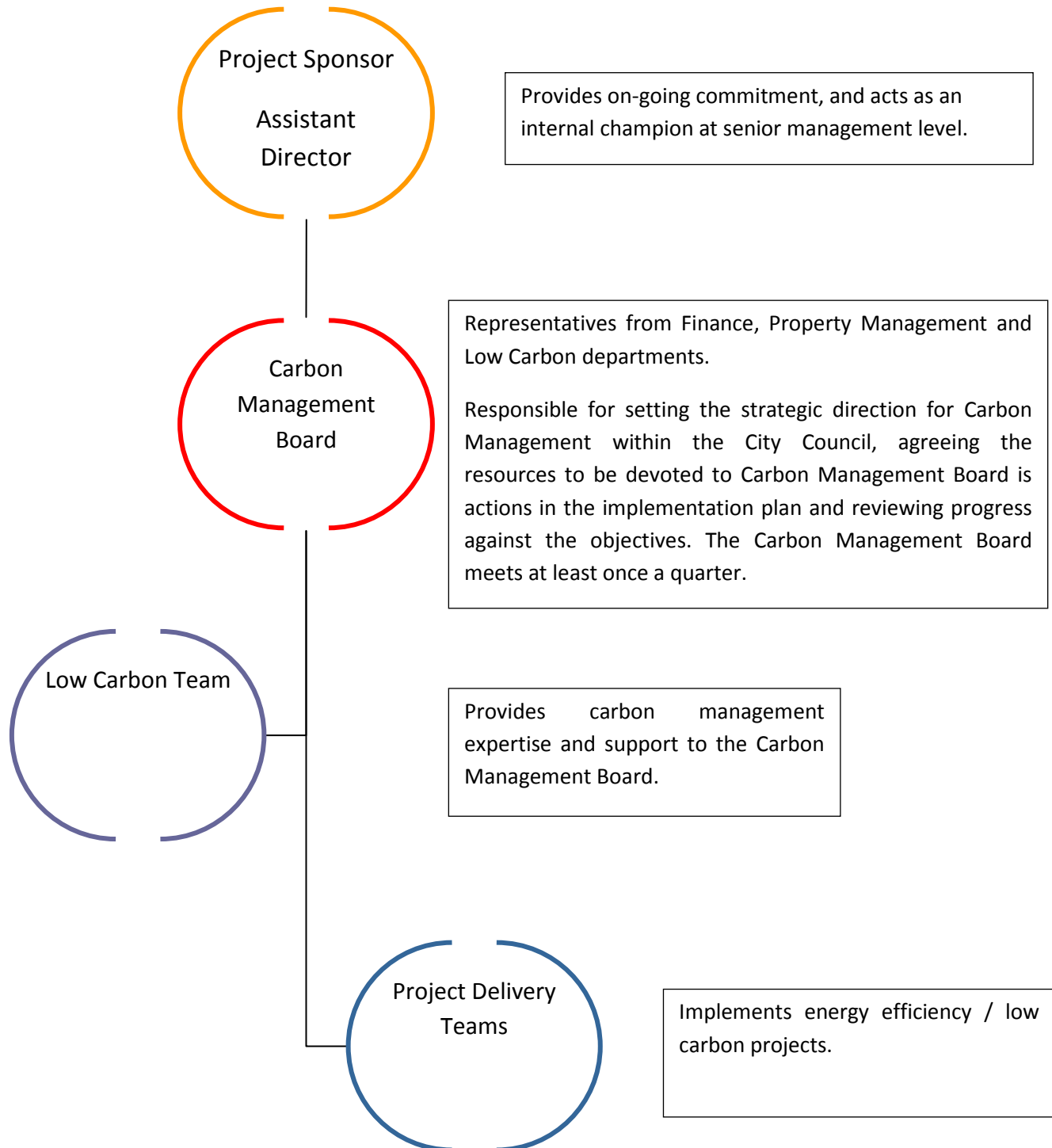
Feed in Tariffs and Renewable Heat Incentive: The UK Government has introduced financial incentives to encourage the uptake of renewable or low carbon technologies providing electricity or heat. The Feed in Tariff is paid for each kW of electricity generated by Solar PV or wind turbines over a contract period of 20 years. While the Renewable Heat Incentive (RHI) is paid for each kW of heat produced over a 20 year contract period from technologies such as biomass boilers or ground source heat pumps.

Property Capital Programme presents opportunities to reduce carbon emissions as plant and equipment is renewed or repaired. This routine funding source can be combined with Salix funding to enhance the energy savings potential of projects by funding more energy efficient solutions where appropriate. There is no general capital programme to fund energy efficiency projects specifically.

8.0 Governance, Ownership, Reporting







8.1 Governance:

The diagram below defines the levels of authority and governance arrangements related to Carbon Management within Coventry City Council.



8.2 Ownership:

To ensure that the Carbon Management Plan is effective and has ownership it is important to define the responsibilities and groups involved in delivering the plan. A number of departments have roles relating to carbon and energy management the flow chart below details the department(s) responsible for each step in the process of delivering an energy / low carbon measure.

| Activity | Responsibilities | Methods |
|---|--|--|
| <div style="border: 1px solid black; border-radius: 10px; padding: 10px; text-align: center;"> Identification of potential projects / improvement  </div> | <ul style="list-style-type: none"> • Energy Team • Project Delivery Team | <ul style="list-style-type: none"> • Analysis of energy consumption data. • Energy Audits • Benchmarking against best practice. |
| <div style="border: 1px solid black; border-radius: 10px; padding: 10px; text-align: center;"> Evaluation of project feasibility  </div> | <ul style="list-style-type: none"> • Project Delivery Team • Energy manager • Low carbon team | <ul style="list-style-type: none"> • Development of initial business case • Salix funding assessment |
| <div style="border: 1px solid black; border-radius: 10px; padding: 10px; text-align: center;"> Approval of projects/ improvement measures  </div> | <ul style="list-style-type: none"> • Special Projects Finance Department • Carbon Management Board • Procurement Board • Facilities Management | <ul style="list-style-type: none"> • Submission of full business case or • Improvement proposal |
| <div style="border: 1px solid black; border-radius: 10px; padding: 10px; text-align: center;"> Procure  </div> | <ul style="list-style-type: none"> • Procurement • Project Delivery Team | <ul style="list-style-type: none"> • Project specification • Selection of contractors / suppliers |
| <div style="border: 1px solid black; border-radius: 10px; padding: 10px; text-align: center;"> Install / Implement Project  </div> | <ul style="list-style-type: none"> • Project delivery team • Low Carbon Team | <ul style="list-style-type: none"> • Project Management |
| <div style="border: 1px solid black; border-radius: 10px; padding: 10px; text-align: center;"> Monitor and evaluate effectiveness  </div> | <ul style="list-style-type: none"> • Project initiator • Low Carbon team • Carbon Management Board | <ul style="list-style-type: none"> • Regular reports |
| <div style="border: 1px solid black; border-radius: 10px; padding: 10px; text-align: center;"> Publicise and report successes </div> | <ul style="list-style-type: none"> • Low Carbon team | <ul style="list-style-type: none"> • Internal / external communications |

8.3 Reporting:

Progress towards achieving the CMP objectives and targets will be reported annually. The report will include:

- A review of low carbon / energy performance and related Performance Indicators
- Changes in legal requirements related to energy / low carbon management
- The extent to which the objectives and targets have been met
- Projected performance for the following period
- Recommendations for improvement

A more detailed review will be undertaken at the end each three year target period.

Appendix 1 – CMP Project Register

| CMP Project Register | | Updated | Jul-14 | Achieved totals | | 4,020 | 2016/17 Target | | 6,900 | 58% | 2019/20 Target | | 9,000 | 45% | |
|--|-----------|-------------------|------------------------|------------------------|--------------------|--------------------------------------|-----------------------|--------------|--------------|--------------|---------------------------------------|--------------|--------------|--------------|--------------|
| | | Next update | Oct-14 | | | | | | | | | | | | |
| Project Description | Status | Annual saving | | Payback | Year of fir saving | Carbon savings profile - CMP phase I | | | | | Carbon savings profile - CMP phase II | | | | |
| | | Financial | Tonnes CO ₂ | | | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 |
| Architectural lighting - power reductions | Completed | £2,146 | 9.3 | 4.7 | 2009/10 | 9.3 | 9.3 | 9.3 | 9.3 | 9.3 | 9.3 | 9.3 | 9.3 | 9.3 | 9.3 |
| Broadgate House basement - replacement of pipework insulation | Completed | £1,050 | 9 | 4.3 | 2009/10 | 9.3 | 9.3 | 9.3 | 9.3 | 9.3 | 9.3 | 9.3 | 9.3 | 9.3 | 9.3 |
| Civic Centre 1 - installation of thermostatic radiator valves | Completed | £250 | 2.2 | N/A | 2009/10 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| Trail of LED lighting upgrade in Civic Centre 4 LED lift lobby | Completed | £581 | 4 | 6.7 | 2009/10 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Energy warden project for all council city centre offices | Completed | £33,000 | 144 | 0.1 | 2009/10 | 30.0 | 50.0 | 100.0 | 144.0 | 144.0 | 144.0 | 144.0 | 144.0 | 144.0 | 144.0 |
| Expand energy warden project to all council premises | Completed | £75,000 | 330 | 0.0 | 2009/10 | | 20.0 | 65.0 | 120.0 | 180.0 | 330.0 | 330.0 | 330.0 | 330.0 | 330.0 |
| Thermostatic radiator valves & cooling/heating mods in Lower Studio | Completed | £1,692 | 8.2 | 5.9 | 2010/11 | | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 |
| CENEX funded scheme to procure low carbon vehicles | Completed | £15,000 | 40 | 0.0 | 2010/11 | | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Computer server virtualisation scheme to reduce numbers of servers | Completed | £21,000 | 78 | 3.0 | 2010/11 | | 39.0 | 78.0 | 78.0 | 78.0 | 78.0 | 78.0 | 78.0 | 78.0 | 78.0 |
| Eco-driving training for city council fleet drivers | Completed | £90,000 | 190 | 0.1 | 2011/12 | | 3.0 | 38.0 | 120.0 | 190.0 | 190.0 | 190.0 | 190.0 | 190.0 | 190.0 |
| Upgrading of lighting in civic centre 1. LED lights in lift lobby. Replacement of T8's with T5's | Completed | £5,500 | 40 | 7.1 | 2011/12 | | | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Lighting upgrade for 5th floor of BroadGate House. | Completed | £700 | 3 | 7.1 | 2011/12 | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Installing TRV's at Elmbank. | Completed | £1,900 | 11 | 3.8 | 2011/12 | | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Voltage optimisation for Council House | Completed | £1,500 | 5 | 3.8 | 2011/12 | | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Upgrade of lighting in Council House | Completed | £2,100 | 12 | | 2012/13 | | | | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Supply heat demands of city centre offices with heat from upgraded Waste from Energy Plant | Completed | £85,000 | 644 | | 2013/14 | | | | | 644.0 | 644.0 | 644.0 | 644.0 | 644.0 | 644.0 |
| Upgrade of lighting in St Marys to LED. | Completed | £1,259 | 7 | 4.8 | 2013/14 | | | | | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 |
| LED lighting in Civic Centre 1 & 4 lift lobbies. | Completed | £600 | 4 | 10.0 | 2011/12 | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Upgrade T8 fluorescent tubes with T5 in CC4 and CC1 | completed | £13,000 | 83 | 6.2 | 2011/12 | | | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 |
| Heat recovery at Canley Crematorium | Completed | | | | | | | | | | | | | | |
| Replacement of street lighting in city through PFI | on-going | £656,000.00 | 4,500 | | 2010/11 | | | 500.0 | 1300.0 | 2300.0 | 3300.0 | 4300.0 | 4500.0 | 4500.0 | 4500.0 |
| Buildings rationalisation | on-going | £32,000 | 425 | | 2010/11 | | 30.0 | 90.0 | 200.0 | 245.0 | 300.0 | 425.0 | 425.0 | 425.0 | 425.0 |
| Friargate | Planned | | 1,600 | | 2016/17 | | | | | | | | 1600.0 | 1600.0 | 1600.0 |
| Installation of gas meter on each cremation unit. | planned | £0 | 1 | | 2014/5 | | | | | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| New Union Street Car Park - upgrade lighting | Planned | £11,700 | 64 | 5.0 | 2014/15 | | | | | | 64.0 | 64.0 | 64.0 | 64.0 | 64.0 |
| Revise and implement energy policy | Planned | £0 | 0 | N/A | 2014/5 | | | | | | | | | | |
| Install AMR meters and purchase data. | Potential | £0 | 0 | N/A | | | | | | | | | | | |
| Install Telematics and Fuel Saving units in fleet vehicles | potential | £65,000 | 200 | | | | | | | | | | | | |
| Upgrade T8 fluorescent tubes with T5 versions in Community Services premises | Potential | | | | | | | | | | | | | | |
| Upgrade T8 fluorescent tubes with T5 versions in libraries | Potential | | | | | | | | | | | | | | |
| Energy Performance Contract - Re:Fit | Potential | £33,000 | 180 | 7.0 | 2015/6 | | | | | | 180.0 | 180.0 | 180.0 | 180.0 | 180.0 |
| Totals | | £1,148,978 | 8,595 | | | 55 | 215 | 1,090 | 2,193 | 4,020 | 5,290 | 6,595 | 6,795 | 8,395 | 8,395 |