AGENDA ITEM 5

FALKIRK COUNCIL

SUBJECT: CARBON MANAGEMENT PLAN
MEETING: EXECUTIVE
DATE: 20 OCTOBER 2015
AUTHOR: DIRECTOR OF DEVELOPMENT SERVICES

1. INTRODUCTION

1.1 The purpose of this report is to present a revised Carbon Management Plan (Appended) for consideration. This third Carbon Management Plan outlines how Falkirk Council may manage its carbon dioxide (CO_2) emissions for the period 2015/16 - 2020/21. It studies patterns to date and outlines options for the future, exploring the risks and benefits. The report seeks Executive approval of the Plan and its recommendations.

2. BACKGROUND

2.1 Falkirk Council was one of the first Scottish local authorities to start proactively managing its carbon emissions back in 2007. The first Carbon Management Plan (CMP) covered the period 2007-2010 with the second spanning 2011 to 2015.

2.2 Over that eight year period, the population of the area has grown by about 4%, with a reflected growth in Council functions to support this. As a result, the carbon emissions from Falkirk Council's estate have overtaken carbon savings from the successful implementation of a multitude of projects. These range from LED lighting, pool covers, and driver fuel efficiency training to a new district heating scheme at Callendar House. (Appendix B)

2.3 Under the Climate Change (Scotland) Act of 2009, as a public body, Falkirk Council is required to demonstrate that carbon reduction is built into all of its operations. It is required to show that it is contributing to the national targets to cut carbon dioxide by 42% and to generate 100% of its electricity consumption, both by 2020. Falkirk Council is one of only a few Scottish local authorities whose carbon emissions have continued to increase over time. As of 2016/17, the Council will have a statutory duty to report publicly on progress towards this.

2.4 This third Plan differs from previous ones in a number of ways, reflecting marked changes in data quality and in carbon management best practice:

- **Baseline** - the 2005/06 baseline to measure change has been revised to 2013/14.
- **Scope -** this has been extended from energy used in buildings, travel, fleet and street lighting to also include waste management and water.
- **Targets** - previous CMPs attempted to achieve the ambitious national CO_2 reduction targets, including projects under development and anticipating additional projects to develop over their lifetime. This Plan focuses only on projects that have been corporately approved and had funding allocated. Continued growth in CO_2 emissions countered by a programme of 18 projects is expected to limit emission growth to 4% over the next 5 years.

3. CONSIDERATIONS

3.1 The programme of 18 confirmed projects that can help to limit CO_2 emissions, are expected to avoid costs in the region of £2m over the Plan's lifetime. The projects are a combination of capital investment, behaviour change and improved management of assets. However, even if they are successfully delivered, at the end of 5 years, CO_2 emissions are likely to have increased by a further 4% and annual costs will have grown by a further £2.6m over 5 years. This highlights that the list of projects corporately supported and agreed to date, whilst beneficial in reducing the rate of growth, are currently of a scale that would fail to achieve any significant net impact in addressing our emissions.

3.2 Analysis of the Council's CO_2 emissions over time and projected into the future, results in the following observations:

- Costs associated with energy, water, transport and waste are increasing steadily.
- The Council's carbon related behaviour has altered little over time, therefore a step change is required to halt the steady growth in CO_2emissions.
- Additional projects and policies require to be supported, developed, funded and fast-tracked to implementation, in order to realise a faster return on benefits.
- Business as usual is not an option to reverse the current trend.
- Falkirk Council at present is short of demonstrating any substantial contribution to the national CO_2 reduction targets

3.3 The organisational changes required to meet budget pressures will consequently result in the rationalisation of services provided by the Council. This in turn is likely to result in reductions in accommodation and operational requirements, which in turn will generate reductions in CO_2 emissions. Details of these changes are still under consideration and therefore cannot be considered as approved projects. However, they will be incorporated into annual updates of the Plan as they are implemented and the benefits are realised. The Plan concludes that Falkirk Council has three future scenarios to choose from in:

1. Continued growth in consumption and CO_2 emissions;
2. Stabilisation of CO_2;
3. Gradual decrease (2.5% reduction p.a.). of CO_2

3.4 Figure 1 below summaries the potential reduction in annual costs by 2020/21 of each scenario. It is anticipated that the existing programme of 18 projects (Scenario 1) (Appendix A) could reduce energy costs by £2m. However, the development of additional projects to stabilise emissions (Scenario 2) could reduce these costs by a further £2m, with a more ambitious programme of work to cut emissions by 2.5% each year (Scenario 3) reducing annual costs by £4m.

	2015/16 – 2020/21		
Scenarios	**CO_2 Management Plan Project Savings**	**Reduction Scenario Savings**	**Total Potential savings**
Business as Usual - continued growth	£2,006,904	£0	**£2,006,905**
Stabilise CO_2 emissions	£2,006,905	**2,073,598**	**£4,080,503**
2.5% reduction year on year	£2,006,905	**3,958,960**	**£5,965,865**

Figure 1: Cost Implications of Potential CO_2 Scenarios – Growth, Stabilisation &Gradual Reduction

3.5 For CO_2 emissions to become stabilised, the primary change required would be that no additional buildings or extensions were added to the estate and that the number of street lights would remain constant or their consumption patterns otherwise stabilised. Any essential building extensions would be balanced by the rationalisation of other building use.

3.6 A 2.5% annual reduction in CO_2 emissions might be attained through a combination of the measures outlined above as well as rationalising hours of building operation, rationalising fleet vehicle use as a result of the newly installed vehicle tracking and planning software. The roll-out of heating management guidance could also make a significant difference.

4. CONCLUSIONS

4.1 The Plan concludes that if the following steps were implemented, they could combine to substantially decrease CO_2 emissions and associated cost at little/no additional expenditure:

- **Optimise use of the built estate –** operations should be focused on more energy efficient properties, with poorer performing ones mothballed or closed.

- **Decisions on built estate** –pending a final decision on the Council's headquarter building and a subsequent cascade of closures and /or rationalisation on which buildings will be retained and how they will be operated is fundamental in achieving real savings. This also impacts on future investment in buildings and staff behaviour being delayed.

- **Build carbon and associated costs into decision making** –whole life costing should become standard in procurement and all Executive reports should include consideration of carbon.

- **Stabilisation/reduction of the estate** – any additions to Council assets should be countered by divestment elsewhere.

- **Embed carbon reduction in I.T.** –the ambitious I.T. investment programme is an opportunity to embed energy efficiency and should be mainstreamed by the Council's I.T. experts and processes.

- **Report progress clearly and regularly** – the Corporate Management Team and Elected Members should receive clear quarterly progress reports on the Carbon Management Plan.

5. REPORTING PROGRESS

5.1 The Carbon Management Plan will be reviewed on an annual basis and will incorporate newly approved and funded projects. A full list of projects is included in Appendix A. They range from outline ideas, through to those confirmed and underway. The projects, their costs and potential savings change constantly, reflecting a wide range of social, economic, financial, operational and legal factors.

6. IMPLICATIONS

6.1 **Financial:** the drive to reduce CO_2 emissions holds the potential for significant savings.

6.2 **Legal:** items reported on are increasingly driven by legislation, in particular the Climate Change (Scotland) Act 2009.

6.3 **Policy:** the Plan highlights the requirement for CO_2 reduction considerations to be embedded in Council policy development across all Services.

6.4 **Personnel:** none.

7. RECOMMENDATION

7.1 It is recommended that the Executive:

(a) Notes the projects successfully delivered by the Carbon Management Plan 2011-2015.

(b) Approves the appended Carbon Management Plan 2015/16- 2020/21.

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Director of Development Services

Date: 20 October 2015

APPENDIX

Falkirk Council Carbon Management Plan Draft (2015/16- 2020/21) - Draft

LIST OF BACKGROUND PAPERS

1. Scotland's Climate Change Declaration

Any person wishing to inspect the background papers listed above should telephone 01324 504712 and ask for Brenda Roddy, (Climate Change & Sustainability Officer)

Falkirk Council Carbon Management Plan

2015/16 to 2020/21

Contents

Carbon Glossary

Climate Change	Climate change is a large-scale, long-term shift in the planet's weather patterns or average temperatures.
Carbon Reduction & Adaptation	Climate change has 2 main elements – (a) How the changing climate impacts on us and how we cope or adapt (called adaptation) (b) Cutting carbon emissions to try to reduce our contribution to the problem in the first place (called carbon reduction or management or mitigation).
Carbon Dioxide (CO_2)	A naturally occurring gas and one of the most abundant greenhouse gases in the atmosphere. Carbon dioxide is also a by-product of industrial processes, burning fossil fuels and land use changes.
Carbon Dioxide Equivalent (CO_2e)	The unit of measurement used to compare the relative climate impact of the different greenhouse gases. The CO_2e quantity of any greenhouse gas is the amount of carbon dioxide that would produce the equivalent global warming potential.
Carbon Footprint	A carbon footprint is the sum of all emissions of CO_2 (carbon dioxide), which were produced by an individual or organisation in a given time frame. Usually a carbon footprint is calculated for the time period of a year.
Carbon Management Plan	A carbon management plan brings together in one place everything you are doing to measure and reduce your carbon emissions. It details your objectives and targets, the emissions baseline, progress against targets, the outcome of completed carbon reduction targets and the action plan of future reduction targets.
Business as Usual Scenario	A description of what would most likely occur in the absence of a carbon offset project, also referred to as the 'baseline scenario'.

EXECUTIVE SUMMARY

1. ROLE OF THE DOCUMENT

This third Carbon Management Plan outlines how Falkirk Council may manage its carbon emissions for the period 2015-2021. It studies patterns to date and outlines options for the future, exploring the risks and benefits.

2. METHOD OF ANALYSIS

The plan scrutinises the Council's carbon footprint, which is made up of emissions from its buildings, travel, waste and operations. It measures tonnes of carbon but also the financial implications, enabling scenarios to be formed.

3. FINDINGS

Falkirk Council has been working on carbon management for the last 8 years. Over that period, its emissions have continued to grow steadily, overtaking benefits gained by carbon and financial savings delivered by a series of projects. The biggest challenge is that the Council's estate has continued to grow steadily in size – increased consumption coupled with steadily rising energy and fuel prices has led to carbon related costs rising from £5.9m to £10.3m over 8 years[1]. Over the 5 year life span of this document, carbon related costs are expected to increase by a further £2.6m or 14%.[2]

The plan identifies a programme of 18 projects that can help to reduce the carbon emissions to some extent, to a value of about £2m over its lifetime. However, even if they are successfully delivered, carbon emissions are still projected to increase by 6% and costs to grow by £2.6m p.a. [3]

The Council area's population continues to grow in relation to population and Falkirk Council is one of only a few Scottish local authorities whose carbon emissions have continued to increase over time. Public reporting to Scottish Government on carbon emissions will become mandatory in 2016, although the Council has been reporting publicly on a voluntary basis for six years.

4. CONCLUSION

The plan finds that the list of projects corporately supported and agreed to date, whilst beneficial in reducing the rate of growth, are currently of a scale that would fail to achieve any significant net impact in addressing our emissions. Continued growth in consumption is overtaking any savings. Whilst austerity measures are expected to result in rationalisation of Council buildings and operations, those decisions have not yet been finalised and therefore cannot be built into this plan. These will be captured and integrated in future updates. The plan concludes that Falkirk Council has three scenarios to choose from:

4. Continued growth in consumption;
5. Stabilisation;
6. Gradual decrease (2.5% reduction p.a.).

The graphs below demonstrate the CO_2 and cost implications of the scenarios, suggesting that by moving from continued growth to stabilising CO_2, the Council could avoid costs in the region of £2m over a five year period. An incremental reduction of 2.5% year on year could avoid costs in the

[1] Ref. Figure 27, Appendix F
[2] Ref Figure 20, Appendix C
[3] Ref Figure 8.

region of £4m over the same period. If the projects outlined in Appendix A of this plan were also to be supported, developed, funded and fast tracked to implementation, in order to realise a faster return on benefits, total costs avoided could be expected in the region of £6m.

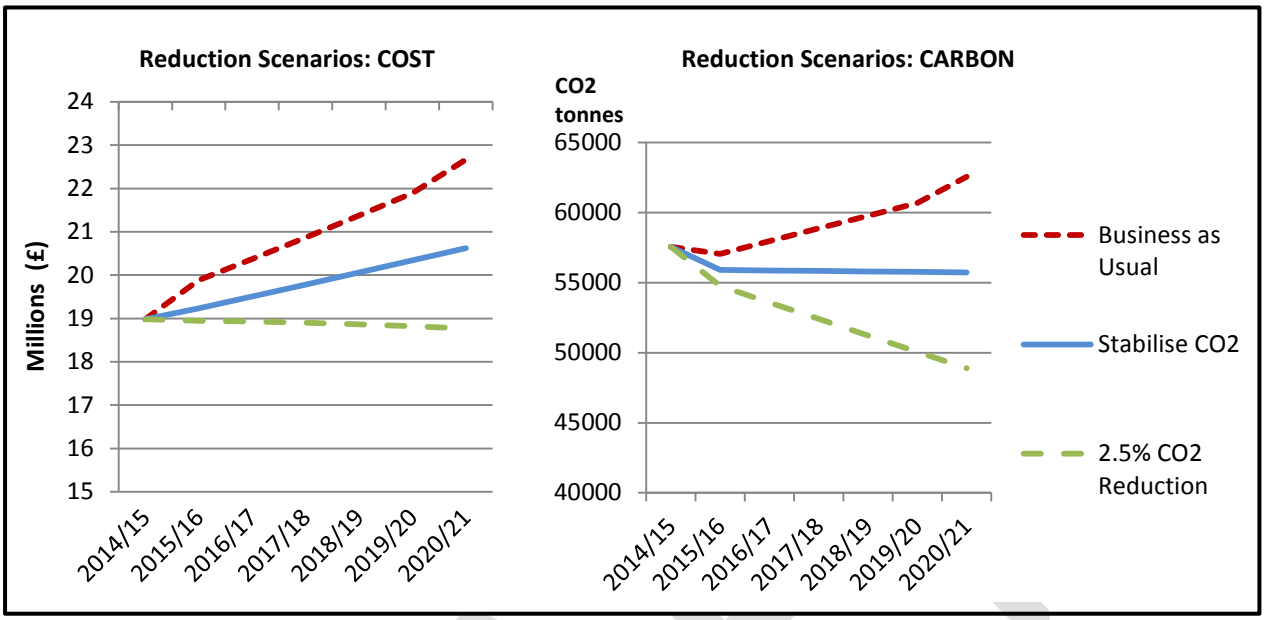


Figure 9: Reduction Scenarios – Cost and Carbon (see page 13 for context).

5. RECOMMENDATIONS

The following recommendations, if implemented, could combine to substantially decrease carbon emissions and associated cost at little or no additional cost:

- **Optimise use of the built estate –** operations should be focused on more energy efficient properties, with poorer performing ones mothballed or closed.
- **Decisions on built estate** –pending a final decision on the Council's headquarter building and a subsequent cascade of closures and /or rationalisation on which buildings will be retained and how they will be operated is fundamental in achieving real savings. This also impacts on future investment in buildings and staff behaviour being delayed.
- **Build carbon and associated costs into decision making** –whole life costing should become standard in procurement and all Executive reports should include consideration of carbon.
- **Stabilisation/reduction of the estate** – any additions to Council assets should be countered by divestment elsewhere.
- **Embed carbon reduction in I.T.** –the ambitious I.T. investment programme is an opportunity to embed energy efficiency and should be mainstreamed by the Council's I.T. experts and processes.
- **Report progress clearly and regularly** – the Corporate Management Team and Elected Members should receive clear quarterly progress reports on the Carbon Management Plan.

6. LIMITATIONS

The field of carbon management is still in its infancy, with methodology constantly developing. Guidance that was used to shape the first two plans has changed significantly as has policy and legislation. The plan will be reviewed and progress will be reported to Elected Members on an annual basis with regular meetings and updates by the Carbon Management Group and the Corporate Sustainability Working Group.

1. INTRODUCTION

1.1 PREVIOUS PLANS

Falkirk Council was one of the first Scottish local authorities to start proactively managing its carbon emissions back in 2007. The first Carbon Management Plan (CMP) covered the period 2007-2010 with the second spanning 2011 to 2015.

Over that eight year period, the population of the area has grown by about 4%, with a reflected growth in Council functions to support this. As a result, the carbon emissions from Falkirk Council's estate have surpassed carbon savings from the successful implementation of a wide range of projects. This is explored more fully in section 5.

1.2 NEW PLAN

This third CMP covers the period 2015-2021. It is being written at a time of economic austerity and unparalleled budget pressures for Falkirk Council, with the recently approved budget for the period 2015/16 to 2016/17 incorporating reductions in budgets and resources. The organisational changes required to achieve this will result in the rationalisation of services provided by the Council with likely reductions in accommodation and operational requirements, which will, in turn, be reflected in reductions in carbon dioxide (CO_2) emissions. At the time of writing, the details of these changes have not yet been implemented; however, they will be incorporated into annual updates on the CMP.

The biggest challenge facing this plan is that the general trend over the last 8 years has been a steady increase in the size of the Council's estate and operations. This pattern requires to be broken, with Elected Members and senior managers factoring in carbon and its associated costs when considering issues such as additional pre-school provision. This has already been done to an extent for the construction of the potential new headquarters building. Whilst significant changes to operations are anticipated over the lifetime of this plan, they are yet to be confirmed. As a result, the tone of this CMP is cautious and conservative.

1.3 BUSINESS AS USUAL IS NOT AN OPTION

The blue line in the graph below shows that if current patterns relating to energy, transport, water and waste continue, then the associated annual costs would increase from **£17.4m to £21.4m** over the lifetime of the plan, equating to a 16% increase in expenditure. This is known as the 'Business as Usual' or BAU scenario.

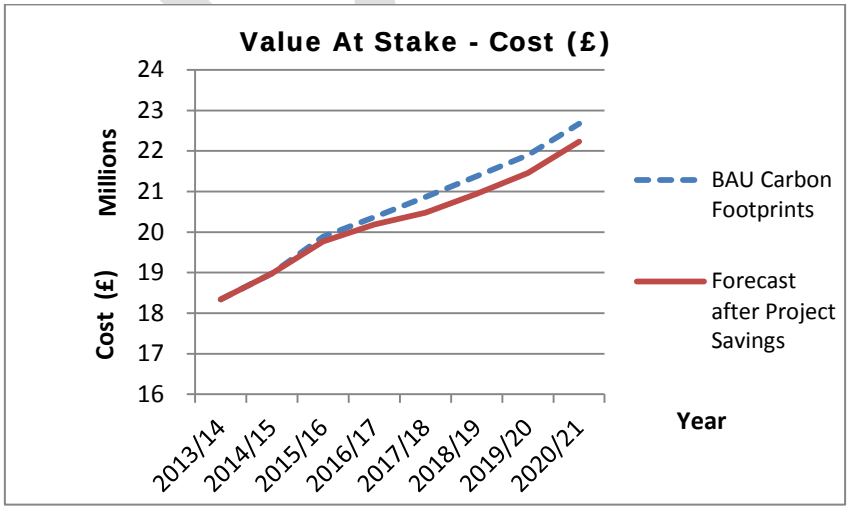


Figure 1: Value at Stake of Implementing Carbon Reduction Projects 2013/14 to 2020/21

The red line shows how the carbon projects detailed in Appendix B of this plan can help to reduce those costs. The difference between these two amounts over the life time of the plan, is known as the Value at Stake. If Council operations continue as predicted and the identified projects are implemented, the total annual cost savings that projects could achieve over the lifespan of the CMP period are in the region of £2m. The cumulative savings are detailed in Figure 2.

1.4 IS THAT REALLY THE BEST THAT WE CAN DO?

Absolutely not. As an organisation, we have struggled to adapt to how we operate in terms of carbon. As a result, our carbon footprint continues to grow as does the associated cost. Our options are as follows:

- Business as usual (continued growth) with modest project development
- Stabilisation of estate and resource use
- A gradual 2.5% year on year reduction in CO_2

This period of change and austerity offers significant opportunity for streamlining operations and curbing growth of emissions. Figure 1 does not take into account efficiency projects that will help to address the future budget pressures, nor does it take into account the series of projects under development as many of these decisions have not yet been made. Section 4 explores these three scenarios in detail, showing significant scope for carbon and cost savings through no cost and low costs measures. However, these initiatives require commitment, support and prompt decision making across all areas of the Council.

1.5 KEEPING THE PROJECT LIST UP TO DATE

The CMP will be reviewed on an annual basis and will incorporate such decisions when approved. A full list of projects is included in Appendix A. They range from outline ideas, through to those confirmed and underway. The projects, their costs and potential savings change constantly, reflecting a wide range of social, economic, financial, operational and legal factors.

1.6 DRIVERS FOR CARBON REDUCTION

Legal – Under the Climate Change (Scotland) Act of 2009, as a public body, Falkirk Council is required to demonstrate that carbon reduction is built into all of its operations and that it is contributing to the national carbon reduction target of 42% by 2020. Scotland has also committed to generate 100% of its electricity consumption by 2020. As of 2016/17, the Council will have a statutory duty to report publicly on progress towards this.

Financial – The costs associated with CO_2 emissions have risen from £5.9m to £10.3m[4] over the last 8 years, therefore, urgent action is needed to stabilise and then reduce consumption of resources and the consequent rising pressure on Council budgets from escalating energy and fuel costs.

Reputational – in 2007, Falkirk Council signed Scotland's Climate Change Declaration where it pledged to lead its community by example by taking concerted action on climate change, reporting publicly on progress.

Further details of legal drivers and incentives can be found in Appendix E

[4] Ref. Figure 27, Appendix F

2. TARGETS, BASELINE, FOOTPRINT & SCOPE

This section sets out what the Council's carbon footprint comprises, explains trends, how change is measured and compares scenarios where action is taken against one where business continues as usual.

2.1 TARGETS & TIMESCALES - What Are We Aiming For?

Scotland's Climate Change Scotland Act aims to reduce CO_2 emissions by 42% by 2020 and by 80% by 2050 against a baseline of 2005/06. It also commits to meeting 100% of its electricity requirement from renewable sources by 2020. With the array of projects developed to date, Falkirk Council is unlikely to meet these targets.

In line with other public bodies and guidance at the time, our previous plans set very ambitious targets in an attempt to align with and contribute to these national targets. Unfortunately our efforts at reducing CO_2 were outstripped by continued growth in energy consumption, largely through the increase in size of our estate and in the intensity of energy use.

In light of this, the targets set in this third CMP will relate purely to projects where the business case has been developed, corporately approved and funding allocated. At the time of writing, 18 projects[5] have been developed with the following target savings identified:

Business as Usual	2014 /15	2015 /16	2016 /17	2017 /18	2018 /19	2019 /20	2020 /21	Total savings
Carbon reduction (CO2 T)	-	547	887	2,381	3,037	3,035	3,033	12,920
Financial savings (£)	-	£113,796	£189,137	£393,850	£429,224	£436,699	£444,199	£2,006,905

Figure 2: Summary of CMP 3 Project CO_2 & Cost Savings by Year

It is important to bear in mind that the Falkirk Council area has a growing population, which will have some degree of impact on service provision e.g. growing demand for schools provision, street lighting and community facilities (Appendix H).

2.2 BASELINE YEAR & DATA - What is Our Starting Point?

The baseline year for this CMP is 2013/14 compared with previous CMPs which used CO_2 emissions of 2005/06 as their starting point. This new baseline has been chosen for a number of reasons:

- Falkirk Council's estate has increased in size and has changed significantly
- The quantity and quality of data available has increased markedly, with real time data now available for much of the estate and fleet energy use
- Much of the old data cannot be replicated and is therefore deemed unreliable

Reasons behind the changes in the carbon footprint over time are covered more fully in section 5. Details of historical data can be found in Appendix F.

[5] Ref Figures 14 & 15, Appendix A.

2.3 CARBON FOOTPRINT - How Much Carbon Do We Produce and on What?

Figure 3, below, shows Falkirk Council's annual carbon footprint, or the amount of carbon dioxide or CO_2 (tonnes) that are produced as a direct result of Falkirk Council's operations each year. We measure it in terms of tonnes and also in terms of the associated financial cost. The most recent full set of data is for financial year 2013/14.

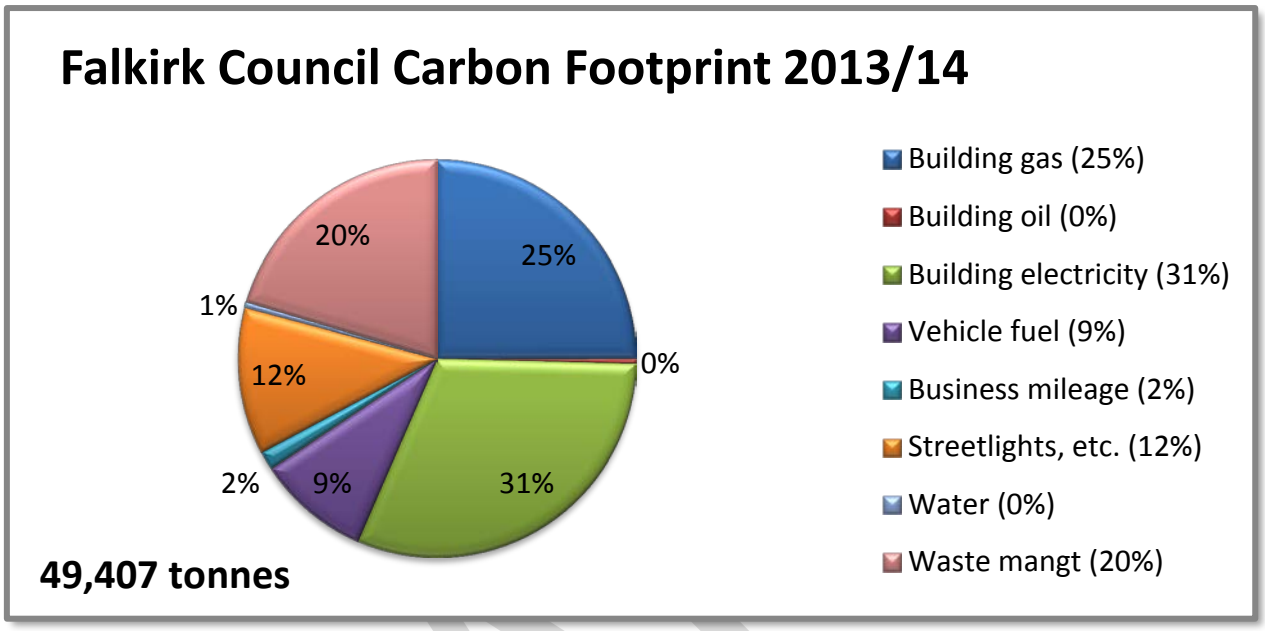


Figure 3: Falkirk Council's Carbon Footprint Split by Emission Type, 2013/14

The graph demonstrates that electricity and gas constitute 56% of the carbon footprint, with schools, leisure centres and Council offices accounting for the majority of this. Whilst waste is another major contributory factor at 20%, it should be noted that the continued move away from landfill to recycling has reduced the greenhouse gases generated by Falkirk Council area by around 60% over the last 10 years. Waste is considered within this plan as Falkirk Council plays a major role in directing how residents manage their waste. However, this is dealt with separately and in detail in the Council's Zero Waste Plan. As such, this CMP concentrates on areas of CO_2 emissions are directly within the Council's control.

Figure 4 overleaf, demonstrates the cost associated with these same components of the Council's footprint. A simple comparison of Figures 3 and 4 illustrates that some items such as electricity and gas have a high carbon cost (56% of total CO_2) but comprise only 33% of the total carbon associated cost. This includes the Carbon Reduction Commitment or CRC, which is effectively a tax on every tonne of CO_2 generated by electricity and gas in buildings.

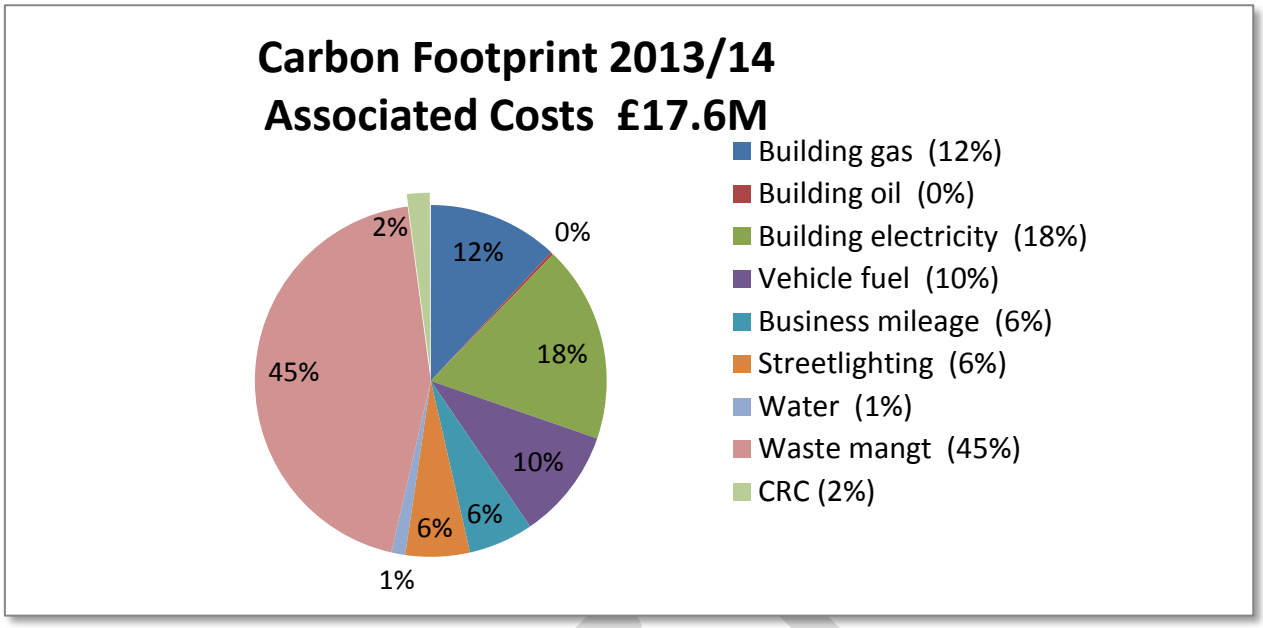


Figure 4: Falkirk Council's Carbon Footprint Split by Emission Type (Cost £), 2013/14

In terms of emissions that the Council does directly control, electricity and gas used in Council buildings account for 71%[6], with half of all energy used in Children's Services' built estate. This pattern has remained largely consistent for the last 8 years. This provides a useful indication of where we might best focus our efforts.

Analysis of CO_2 by Building Type

With energy use in buildings accounting for a high level of CO_2 emissions and cost, it is useful to examine this by property type. Figure 5 below shows that the vast majority of building related emissions arise from schools. Primary schools are high energy users because we have 50 of them. High schools and leisure centres have long opening hours reflecting community demand and many incorporate swimming pools. The chart highlights that our resources would be best focused on schools, sports centres and Council offices.

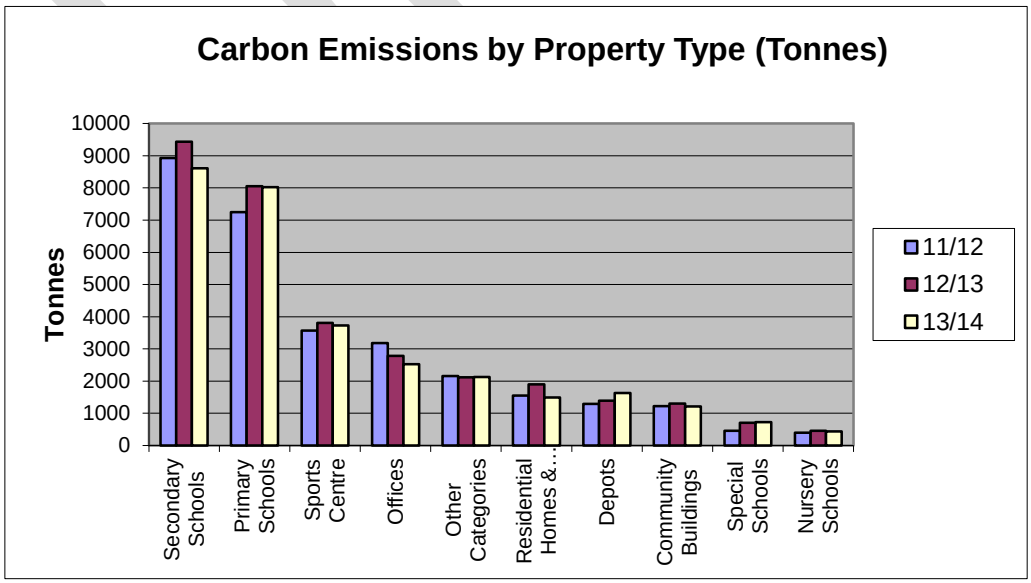


Figure 5: Falkirk Council's Operational Estate's CO_2 Emissions by Property Type 2011/12 to 2013/14

[6] Ref. Figure 27, Appendix F

2.4 SCOPE - What Are We Measuring?

The scope of the plan is the range of Council operations that will be included in the CMP. This can change as the field of carbon management continues to evolve and as data available improves.

PREVIOUS SCOPE - Previous plans have concentrated on energy from Falkirk Council buildings, staff travel, fleet and street lighting – generally considered items that it can directly control. They have included energy used both in the Council's operational estate (where the bill is met by Falkirk Council) and also some non-operational where the bill will be recharged e.g. housing communal stair lighting.

REVISED SCOPE - This plan has reviewed its scope to focus on issues that the Council can significantly influence. For this reason, it does not include buildings that it lets out commercially to third parties as the occupiers control their own energy use. It will also now include waste management. How waste is managed makes a significant difference to the greenhouse gases that are released. Water related emissions will also be included for the first time – both supply and disposal. Staff travel data is limited at present to mileage claims, however, it is hoped that this can be extended over the lifetime of the plan to include public transport and flights.

Please note that extending the scope of the plan, means that the carbon footprint for 2013/14 onwards will be significantly higher than emissions reported publicly in previous years. The new plan's scope can be outlined as follows:

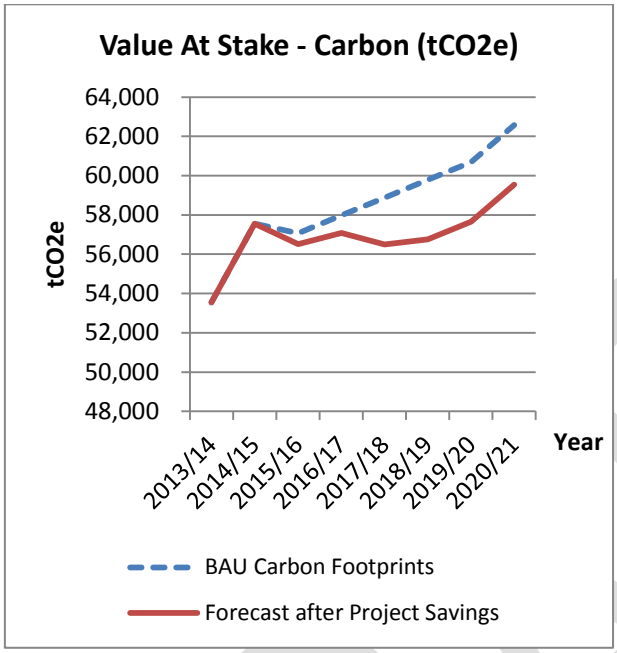
Buildings	Electricity, gas, oil, renewable energy generation and water consumption in Council operational buildings.
Transport	Council fleet travel, staff travel in Council owned vehicles, in their own vehicles and by public transport (under development)
Street lighting	Electricity use on Council owned lanterns, signage, beacons.
Waste	Landfilled, recycled/reused, incinerated and hazardous all waste collected by Falkirk Council
Water	Consumption & disposal from Falkirk Council operational buildings
Housing	Energy/CO_2 reductions arising from work to improve building quality and reduce fuel poverty (under development).

Full details of the scope compared to previous years can be found in Appendix G

3. PROJECTIONS & VALUE AT STAKE - What Is Our Current Trajectory?

3.1 CARBON

A key role of the Carbon Management Plan is to outline how CO_2 emissions and associated costs are likely to develop over the lifetime of the plan if no action is taken and then compare that with the impact of delivering projects and meeting targets. The potential variance between the two is known as the 'Value at Stake' (VAS) compared with 'Business as Usual' (BAU), as demonstrated in Figure 6.



Year	Projected Carbon Savings (tonnes)
2014/15	0
2015/16	547
2016/17	887
2017/18	2,381
2018/19	3,037
2019/20	3,035
2020/21	3,033
Sum	**12,920**

Figure 6: Projected CO_2 Emissions Business as Usual Compared with Implementation of CMP Projects

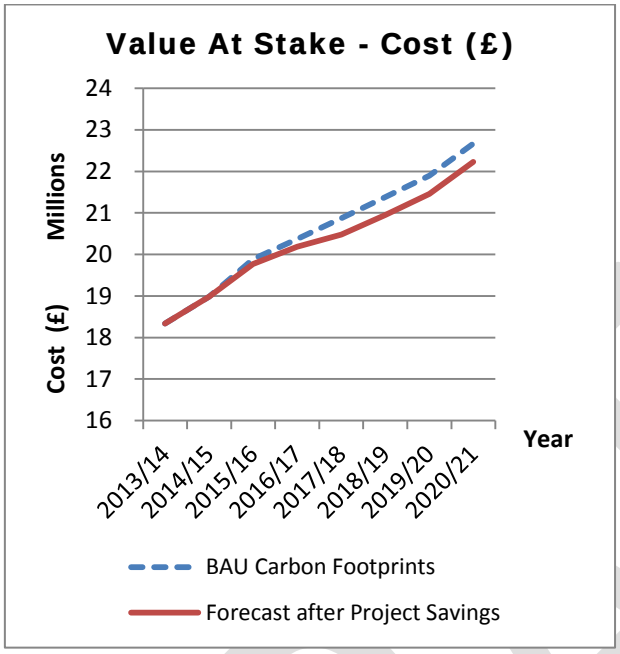
The graph above is a model that projects future carbon emissions. The blue dotted line shows the Business as Usual (BAU) scenario, indicating the future likely path, based on a combination of patterns to date and identifiable changes. The red solid line denotes how CO_2 emissions are expected to look if the projects identified in this plan (Appendix A), are implemented. The difference between the two lines is known as the Value at Stake and amounts to a reduction of 12,920 tonnes over the 5 year life span of the plan.

The anticipated sharp rise in emissions in 2014/15 largely reflects improved data collection relating to street lighting energy use. The gradual rise thereafter reflects the continued steady growth in how we use energy in our buildings, street lights and fleet vehicles. Staff travel and waste management related emissions have and are likely to continue to decrease, helping to mitigate the general emissions growth.

If action is not taken to reduce the Council's CO_2 emissions, it is expected that by 2021, they will have increased by 11%. If the suite of projects identified to date in this plan is implemented, the footprint will still continue to grow, but only by 6%

3.2 FINANCIAL COSTS

In Figure 7 below, the blue dotted line denoting the Business as Usual Scenario indicates that continued increase in energy and fuel use combined with steady prices rises, are likely to result in an additional £4m annual spend by 2021. The solid red line shows a marginally lower increase if the 18 projects outlined in this plan are delivered. The cost of energy is largely out with our control whilst how much we use is something that we can affect. The marginal difference reflects the relatively small number of significant carbon reduction projects identified and approved to date.



Year	Projected Project Savings
2014/15	£0
2015/16	£113,796
2016/17	£189,137
2017/18	£393,850
2018/19	£429,224
2019/20	£436,699
2020/21	£444,199
Sum	**£2,006,905**

Figure 7*: Projected CO_2 Associated Costs - Business as Usual Compared with Implementation of CMP Projects*

The gap between these two scenarios illustrates that over the next five years, projects contained in the CMP should deliver financial savings in the region of £2m. The reasons that this savings figure is not higher are twofold:

(i) Carbon emissions related to the Council estate and operations continue to increase

(ii) The cost associated with these emissions, such as the price of fuel, also continues to increase

	YEAR						
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
	Cost Savings (£)	Cost Savings (£)	Cost Savings (£)	Cost Savings (£)	Cost Savings (£)	Cost Savings (£)	Cost Savings (£)
Stationary	-	113,796	189,137	375,591	392,705	400,193	407,707
Water	-	-	-	-	-	-	-
Waste	-	-	-	18,260	36,518	36,506	36,491
Transport	-	-	-	-	-	-	-
Total	-	113,796	189,137	393,850	429,224	436,699	444,199
Cumulative savings £	-	**113,796**	**302,934**	**696,784**	**1,126,007**	**1,562,706**	**2,006,905**

Figure 8: Cumulative Total of Financial Savings Arising from Projects with Carbon Reductions

N.B. 'Stationary' refers to electricity, gas & oil

If the suite of projects identified to date in this plan is implemented, the footprint will still continue to grow, but only by 6% compared with 2013/14, with an associated additional cost in the region of £3.9m. This tells us a number of key messages:

KEY MESSAGES

- The costs associated with energy, water, transport and waste are increasing at a faster rate than we can implement changes in use – we are effectively running to stand still.
- A step change is required to stabilise the carbon footprint.
- Additional projects and policies must be developed, supported, approved and fast-tracked to implementation
- Business as usual is not an option.
- Falkirk Council at present is short of demonstrating any substantial contribution to the national CO_2 reduction targets.

3.3 IS THERE ANOTHER WAY?

So far this document has focused purely on projects that have been committed to by Falkirk Council. Although changes are expected to how the Council operates during the life span of this plan, no detail is available at this stage to model the potential impact on carbon and related costs. However, it is important to explore. The following graph has 3 lines:

(i) Continuation of 'Business as Usual'

(ii) Stabilisation of carbon emissions

(iii) A projection of 2.5 % reduction in fleet fuel, electricity, gas and oil in buildings.

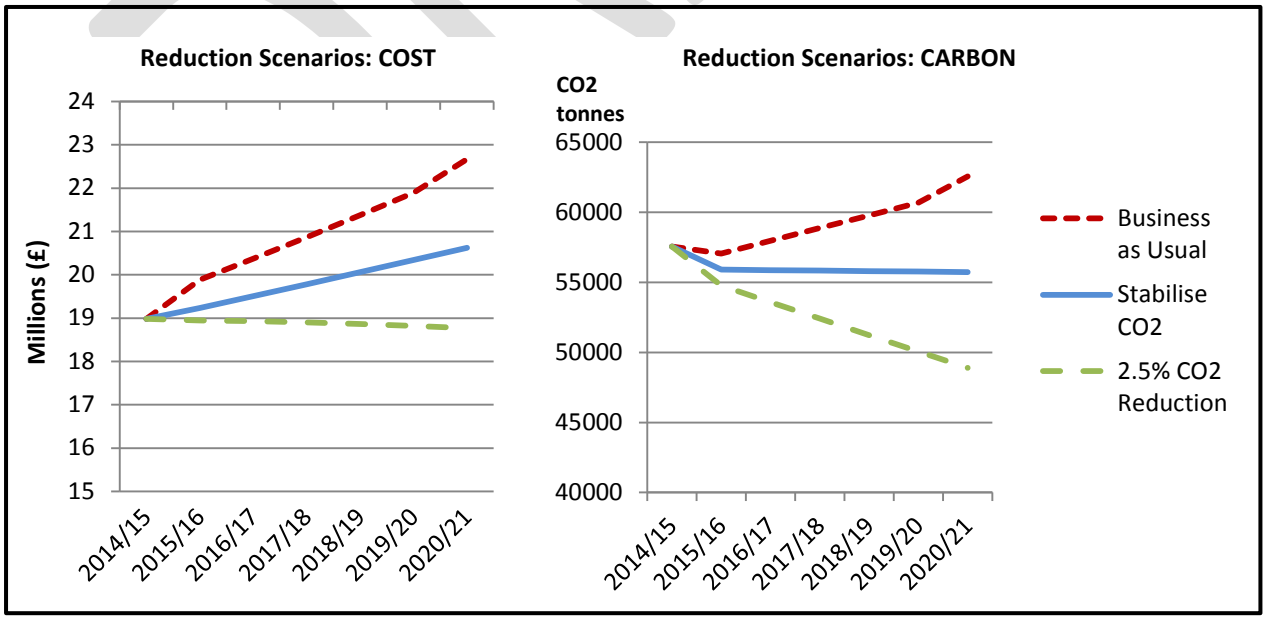


Figure 9: Carbon Reduction Scenarios – Cost and Carbon

3.4 HOW CAN THESE SCENARIOS BE ACHIEVED?

The graphs above demonstrate that by moving from continued growth to stabilising CO_2, the Council could avoid costs in the region of £2m over a five year period. An incremental reduction of 2.5% year on year could avoid costs in the region of £4m over the same period. If the projects outlined in Appendix A of this plan were also implemented, total costs avoided could be expected in the region of £6m.

Scenario	CMP Project Savings	Reduction Scenario Savings	Total potential savings
Business as Usual - continued growth	£2,006,904	£0	**£2,006,905**
Stabilise CO2 emissions	£2,006,905	**2,073,598**	**£4,080,503**
2.5% reduction year on year	£2,006,905	**3,958,960**	**£5,965,865**

Figure 10: Cost Implications of Potential CO_2 Scenarios – Growth, Stabilisation &Gradual Reduction

Scenario 1: Business as Usual - Consumption rises. Unit costs rise.

This assumes continued gradual increase in consumption of electricity, gas, oil in buildings and street lighting in the region of 2% p.a. Staff travel would continue to steadily decline, fleet use would continue to increase. Waste and water use patterns would be plotted to remain constant. However, national average cost increases are factored in. Gradual continued expansion of the estate, including school extensions and temporary classrooms. (Full details of financial projections can be found in Appendix D).

Scenario 2: Stabilisation of Carbon Emissions. Unit costs rises.

The primary change required would be that no additional buildings or extensions would be added to the estate and that the number of street lights would remain constant or their consumption patterns otherwise stabilised. Any essential building extensions would be balanced by the rationalisation of other building use. It should be noted that the carbon emissions associated with electricity from the National Grid are gradually decreasing, reflecting a rising proportion of renewable energy in the national energy mix.

Scenario 3: Decrease in Carbon Emissions. Unit costs rise.

This might be attained through a combination of the measures outlined in scenario 2, plus a number of low cost/ no cost operational changes e.g.

- Rationalising hours of building operation, maximisation of occupancy and alternative work patterns
- Rationalising fleet vehicle use as a result of the newly installed vehicle tracking and planning software
- Use of heating management guidance

It can be difficult to envisage what a 2.5% reduction might look like. Putting waste and water aside to focus purely on Falkirk Council's electricity, gas and fleet fuel, Figure 11 looks at a selection of functions that together account for about 2.5% of Falkirk Council's carbon emissions.

Site	Electricity kWh	Electricity Cost £	Gas kWh	Gas Cost £	Fleet Fuel Litres	Fleet Fuel Cost £
Cunningham House	158,451	£ 15,100	511,113	£ 14,789	0	£ -
Dorrator Court	112,946	£ 12,159	501,706	£ 16,752	0	£ -
Grahamston House O.P.H.	89,561	£ 8,994	487,429	£ 15,021	0	£ -
Printw orks (Reprographics Unit)	105,902	£ 11,109	16,208	£ 739	0	£ -
Slamannan Primary School	101,078	£ 10,542	0	£ -	0	£ -
Blackness Primary School	74,225	£ 7,588	0	£ -	0	£ -
Victoria Primary School	220,361	£ 22,235	522,746	£ 17,952	0	£ -
Whitecross Primary School	45,964	£ 4,945	0	£ -	0	£ -
Community Trust Annual Fleet Fuel Use	0	£ -	0	£ -	40,932	£ 43,421
Sum	**908,488**	**£ 92,672**	**2,039,203**	**£ 65,253**	**40,932**	**£ 43,421**

Figure 11: Equivalent of a 2.5% Reduction in Electricity, Gas and Fleet Fuel

An alternative way of visualising what a 2.5% reduction in electricity and gas might look like is – the equivalent annual energy use of approximately:

- 5.5 primary schools or
- 4.6 old people's homes or
- 3,000 street lights

4. PREVIOUS TRENDS

This section reviews how carbon emissions have changed over time, probing why previous attempts to cut them have not succeeded, identifying how the approach must change in order to bring about success. It will look briefly at changes to CO_2 emissions since the last CMP was approved in 2011, moving on to explore the main reasons behind trends over the last 8 years.

Component	2010/11	2011/12	2012/13	2013/14
Building gas (excl. CHP)	14,514	14,466	16,193	14,855
Building oil	158	196	227	215
Building electricity	19,562	16,535	19,755	17,133
Vehicle fuel	4,143	4,417	5,074	4,518
Business mileage	894	856	821	777
Streetlights, etc.	5,020	5,133	5,533	5,874
Total emissions	44,291	41,604	47,604	43,372
% change from previous year	5%	-6%	14%	-9%

Figure 12: CO_2 Emissions Changes by Type Since 2010/11

Review of Carbon Performance 2011-2015

The table above summarises changes to Falkirk Council's CO_2 emissions since the last CMP started in 2011/12. Carbon data is complex and is constantly evolving, making it difficult to interpret at a glance. The table demonstrates how a prolonged winter, such as that of 2012/13, can effectively negate any savings made through carbon and energy efficiency projects. In short, our best efforts at cutting CO_2 emissions through a stream of projects, has been overtaken by our continued increase in energy and resource consumption.

4.1 BUILDINGS

Energy in buildings –since Falkirk Council started tracking its energy and carbon emissions eight years ago, the amount of **energy** used by buildings annually has grown steadily by around 3% each year. The total amount of **CO_2** emissions increased by 13%, this is a lower figure as many heating systems have switched from using electricity to gas which uses less CO_2. The 13% increase in emissions can be attributed to a combination of:

Growth of estate – seven existing high schools were replaced by eight larger ones, each with additional and improved facilities such as swimming pools. Whilst of great benefit in terms of facilities to pupils, teachers, education and the community, these now operate in addition to previously existing facilities such as community and centres and leisure centres. In addition three new primary schools opened and many temporary classrooms were installed (less energy efficient than permanent buildings), all reflecting the growing population of the Council area.

Increased building use –the introduction of flexible working hours for staff means that Council buildings can be occupied for longer hours. The eight new high schools are also designed as community hubs, meaning longer opening hours for public access compared with their predecessors, whilst existing community hubs remain in place.

Improved data – in 2005/06 two thirds of energy bills were estimates, compared to under 10% in 2015. It is likely that energy use was under estimated in previous years due to data quality.

4.2 FLEET VEHICLE USE

Fleet vehicles are an essential part of the Council's transport system and vital to successful business operations. Fleet operators are under growing pressure from rising fuel costs, congestion and the need to reduce environmental impacts.

Fleet use is a complex picture, reflecting the great variety of functions that the Council performs, ranging from care of young people to household waste collection and road gritting. The fuel growth results from increased heavy vehicle use for waste collection, for winter road gritting and also the reduction in fuel efficiency of 'cleaner' engines (technology to reduce fleet emissions can, unfortunately, result in lower fuel efficiency).

4.3 BUSINESS MILEAGE

The steady decrease in staff travel mileage reflects a combination of increased fuel prices, sustainable travel initiatives, changes in staff numbers and to the mileage claim allowance rate.

4.4 STREET LIGHTING

Continued population growth in the Council area has resulted in a gradual increase in housing and street lighting. The steady increase in emissions from street lights is due to a combination of housing growth, changes to safety lighting requirements and changes to data capture. This is counterbalanced to an extent by increased lamp efficiency and a number of pilot lighting efficiency projects.

4.5 WASTE

Whilst waste was not included in the scope of previous CMPs, the greenhouse gases (GHGs), associated with waste are substantial. The GHGs associated with Falkirk Council's waste collection have decreased by 62% since 2005/06 as a result of a steady move from landfill to recycling. This is only part of the picture, augmented by issues such as increasing population, increased packaging, buying possibly curtailed by economic downturn, increased recycling, food waste collections, successful communication campaigns and EU targets.

5. FUTURE ACTIONS

This section outlines the type of action that is necessary and is planned, in order to reduce Falkirk Council's carbon footprint. This is purely an overview, with a full list of projects to be found in Appendix A. The actions to address this fall into three main types, often in combination:

Capital investment (C)

Improved management of assets (M)

Behaviour change (B)

5.1 BUILDINGS

- Rationalise buildings / estate – closure or 'mothballing' and maximising occupancy will have a significant impact **(M)**
- Improve how we manage and use buildings e.g. focus on multiple occupancy and on more energy efficient stock **(M)**
- Improve individuals' energy efficiency in buildings by raising awareness and engaging **(B)**
- Improve the energy efficiency and heat usage of buildings **(M)**

5.2 FLEET

- Purchase vehicles with low CO_2 emissions **(C)**
- Rationalise and lower overall fleet size **(M)**
- Promote telematics to ensure maximum fleet utilisation **(M & B)**
- Promote safe, economic & environmentally-friendly driver training **(B)**

5.3 STAFF TRAVEL

- Greater use of low carbon pool vehicles **(B)**
- Public transport promotion **(B)**
- Strengthen the electric vehicle charging network throughout the area **(C)**

5.4 STREET LIGHTING

- Continue the use of LED street lighting and other lower energy equivalents **(C)**
- Replace street lamps and control gear with more energy efficient equipment **(C)**

5.5 WASTE

- Further extend roll out of household food waste collection **(C&B)**
- Correspondingly reduce the frequency of household residual bin collection **(B)**
- Support and encourage an increase in business recyclate collection rates **(B)**

5.6 PROCUREMENT

- Ensure that all procurement considers whole life costing implications **(M)**

- Support officers in their use of the *Sustainable Procurement Guide and Toolkit* to build sustainability in commodity strategy development, specifications, contract conditions and contract management. **(B)**
- Use of Government Buying Standards product and service specifications with built in sustainability best practice. **(B)**

5.7 CORPORATE COMMITMENT

- Quarterly reports on Services' carbon emissions will be issued to and reviewed by Departmental Management Teams and the Corporate management Team. **(M)**
- Services build CO_2 reduction targets into their service plans **(M)**
- Public reporting on CO_2 emissions **(M)**
- Adopt and implement a heating management guide for the Council's built estate **(M)**
- Rationalise use of the estate and fleet to optimise energy and fuel use **(M)**
- Explore potential carbon reduction proposals across the Council's secondary school portfolio **(M)**

5.8 INFORMATION TECHNOLOGY

- Provision of virtual desktop infrastructure, allowing a reduction in the number of desktop PCs **(C)**
- Reduced technical travel through central and remote support **(M)**
- Review of assets to support mobile and flexible working strategies **(C& M)**

6. FINANCING CARBON SAVING PROJECTS

This section provides an overview of the main funding mechanisms available to finance projects that comprise the CMP. Projects are likely to be funded through a combination of options, including:

6.1 NO COST/LOW COST

Some of the projects with the greatest carbon saving potential will have limited financial outlay but require significant planning, e.g. behaviour change, implementing heating management guidance and rationalising how buildings are used.

6.2 CENTRAL ENERGY EFFICIENCY FUND (CEEF)

In 2004, the Scottish Government announced the launch of a new Public Sector Energy Efficiency Initiative. Under this initiative, £20 million in new funding was provided over 2004/05 and 2005/06 to implement energy efficiency and, from 2008, renewable energy measures, to reduce carbon emissions across the public sector in Scotland. The scheme applies to all Scottish local authorities and health boards as well as Scottish Water. The funding has been used to set up revolving funds administered at local level. The savings from energy efficiency cost savings are then used to re-invest into the fund to allow additional projects to proceed.

6.3 SALIX FUND:

A UK and Scottish Government backed soft loan fund that aims to increase capital investment in energy efficient technologies across the public sector. It is a ring-fenced fund with capital provided by Salix, and matched by the partner organisation, to be spent on energy saving projects with paybacks of less than 7 years. The financial savings delivered by the projects are returned to the fund allowing further spending on front line services, hence the term 'Recycling Fund'.

6.4 FALKIRK COUNCIL SPEND TO SAVE FUND

Larger scale projects with a relatively short payback period of 2 years or less were previously considered for investment of Council reserve funds.

6.5 EXTERNAL GRANTS

Funds are sometimes announced at short notice to support projects that help to deliver the UK and Scotland's carbon reduction agenda e.g. electric vehicle charging point and fleet.

6.6 PARTNERSHIP PROJECTS

Creative funding vehicles are constantly emerging such as joint funding ventures and energy service companies or ESCOs - a type of non-profit business providing a broad range of energy solutions.

Details of funding sources for projects can be found in Appendix J

7. RESPONSIBILITY, GOVERNANCE & REPORTING

This section explores who has the responsibility for driving, implementing and tracking progress of the carbon reduction programme. It explores the roles of specialist officers, specialist support units, Council Services, the governance role of corporate working groups and how they report on progress. It starts by asking who develops and drives projects – should it be driven from the top down, bottom up or a mixture of both?

Commitment to reducing carbon emissions needs to come from across all of Falkirk Council's Services and from all levels. Standalone projects led by enthusiastic officers alone will not make a significant difference to the Council's carbon footprint. Carbon reduction must be built into the foundations of how the Council procures, operates and reports and can be driven by two main routes within Falkirk Council:

(A) COUNCIL SERVICES

In driving improvements forward, it is imperative that all parties and Services:

- Share a corporate commitment and support specialist officers' engagement and investigations into new technologies and potential projects.
- Commit to reduce consumption year on year in existing properties through physical, operational and behavioural improvements.
- Commit to the same strategy for new build additions to the Council's portfolio of properties.
- Promote , encourage and support individual Services to take ownership of initiatives and schemes that will deliver carbon savings.

(B) SUPPORT FUNCTIONS

Fleet operations - the Fleet Management Team encourages Services to procure and operate their fleet in the most fuel efficient manner. However, responsibility for the vehicles chosen and how efficiently they are run, must lie with the Director of each Service. Fleet Management plays a vital role by supplying the Climate Change Team with monthly reports on fleet fuel use by each Service.

Energy and water support is provided by the Energy Management Unit. They provide Services with detailed reports on electricity, gas and water use, helping Services to identify opportunities for reducing utility use, which in turn reduces CO_2 emissions. Following a programme to install automatic meter readers in the majority of buildings, highly accurate data on electricity and gas consumption is now available, with quarterly reports on use by each Service to be provided by the Climate Change Team. Again, this team can advise on efficiency measures, but, responsibility for acting on advice and investing lies with individual Services.

Other specialist officers and teams, such as the Building Design Unit and street lighting engineers, are responsible for the majority of carbon reduction projects listed in Appendix A.

7.1 GOVERNANCE & REPORTING

In order to ensure that there is effective and on-going ownership of the Carbon Management Plan, it is important to define governance, delivery and reporting structures. The following governance structure has been put in place:

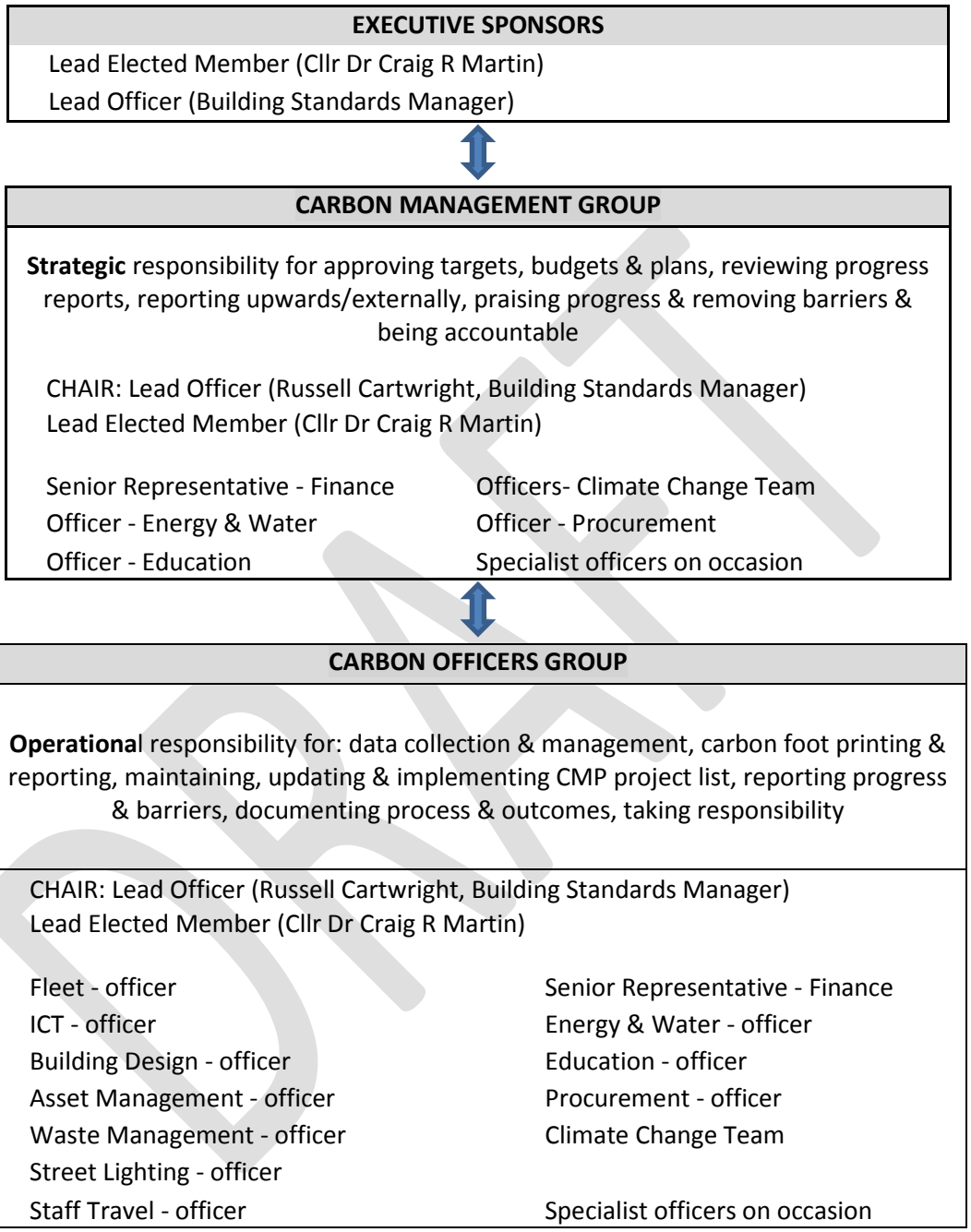


Figure 13: Carbon Management Plan Governance Structure

Responsibility for delivery of the Carbon Management Plan lies with the **Corporate Sustainability Working Group** with progress steered by the Carbon Management Group. *(See Appendix K for its Terms of Reference).* The Climate Change Team reports to this group on a quarterly basis, outlining future developments, potential barriers/opportunities. This group is responsible for ensuring that Falkirk Council meets legal requirements under the Climate Change Scotland Act 2009. It scrutinises

progress reports on delivery of the CMP as well as public reports on climate change performance which include a significant carbon emissions element. This group provides regular updates to the Corporate Management Team and to the Performance Review Panel.

The **Carbon Management Group** comprises senior officers and an Elected Member with specialist knowledge and influence at corporate level.

The **Carbon Officers Group** – is an operational group comprising officers who are responsible for key areas of the Council's CO_2 emissions, both direct and indirect. The majority of officers will be the lead officers on carbon reduction projects relating to their field and will provide progress reports at this quarterly meeting to the Carbon Management Group, who will also be in attendance.

The **Climate Change Team** - carbon management forms a major part of the team's role which includes production of the CMP, supporting the development of projects, monitoring carbon emission trends, tracking project delivery and securing external funding and support. The team supports both the operational and management groups, reporting to Corporate Sustainability Working Group.

7.2 PUBLIC REPORTING

By signing up to Scotland's Climate Change Declaration in 2007, Falkirk Council made a number of commitments, including one to report publicly on progress on addressing carbon emissions. A report has been submitted to the Sustainable Scotland Network for each reporting year and they in turn, publish the reports on their website.

Reporting to date has been on a voluntary basis. However, in November 2014, the Scottish Government announced that it planned to enact legislation that would make it a statutory duty for public bodies to report on progress on addressing climate change. In 2015/16 a revised reporting template will be piloted with the approved statutory reporting template to be produced in time for 2016/17. As Falkirk Council has reported publicly and comprehensively to date, the main impact is expected to be limited to revising internal consultation and reporting structures.

8. CONCLUSION

The message repeated in each section of this plan is that Business as Usual is not an option. Data over the last 8 years tells us that up until now, consideration of carbon has not formed a significant part of decision making processes as standard. Change is required, but how can it be achieved?

The following recommendations, if implemented, could combine to substantially decrease carbon emissions and associated cost at little or no additional cost:

8.1 **Optimise use of the built estate –** the Council has 313 operational buildings of varying levels of energy efficiency. Operations should be focused on more energy efficient ones, with poorer performing ones mothballed or closed.

8.2 **Decisions on Built Estate** - budget plans are likely to include rationalisation of the estate. However the complicated nature of such decisions means that they are likely to take time to be implemented. Clarity and criteria for determining which buildings will be retained and how they will be operate is critical and can have a major influence on carbon emission reduction. Any delay in decisions could impact on focused investment in buildings and staff behavioural change.

8.3 **Build carbon and associated costs into decision making –** decisions require to be made and implemented with full consideration of carbon and its cost implications. A whole life costing appraisal of programmes could help to avoid unexpectedly high energy and carbon operational costs.

8.4 The Climate Change Scotland Act makes consideration of CO_2 a legal obligation. Whole life costing should become standard in procurement. Executive reports should include consideration of carbon as standard.

8.5 **Stabilisation/reduction of the estate –** any additions to Council assets should be countered by divestment elsewhere.

8.6 **Embed carbon reduction in I.T. –** carbon emissions associated with computer equipment continues to grow steadily. The ambitious I.T. investment programme is an opportunity to embed energy efficiency and must be mainstreamed by the Council's I.T. experts and their processes.

8.7 **Report progress clearly and regularly –** the Climate Change Team and Carbon Management Group will report quarterly to the Corporate Sustainability Group. This in turn will report to the Corporate Management Team on a quarterly basis and to Elected Members on an annual basis.

9. APPENDICES

Appendix A – Project Register 2015/16 to 2020/21 – tables 1 to 5

Appendix B – Details of Previous Carbon Reduction Projects

Appendix C – Projected CO2 Emissions & Costs 2013/14 to 2020/21

Appendix D – Projection Methodology & Data Sources

Appendix E - Legal Drivers

Appendix F – CO_2 Emissions 2005/06 to 2013/14

Appendix G– Scopes – Previous Scope v Revised Scope

Appendix H – Summary of Population & Staff Number Changes Over Time

Appendix I – List of Strategies & Policies That Will Affect This Plan

Appendix J- Funding Details of CMP#3 Projects

Appendix K – Terms of Reference for Corporate Sustainability Working Group

APPENDIX A – Carbon Management Plan Project Details 2015-2021

Project Tables Maturity Structure:

Fig 14 Stage 5 Projects – Live Approved & Funded
Fig 15 Stage 4 Projects – Business Developed & Awaiting Funding
Fig 16 Stage 3 Projects – Scoping - Business Case Under development
Fig 17 Stage 2 Projects – Undergoing Feasibility Study
Fig 18 Stage 1 Projects – Concept

Figure 14: Stage 5 CMP Projects - Live, Approved & Funded

Ref	Project Description	Location	Capital Spend Year	Capital Cost (£)	Project Status	Estimate Confidence	Type of Emission Saving	Amount of Savings (p.a. when complete)	2014/15 (tCO2e)	2015/16 (tCO2e)	2016/17 (tCO2e)	2017/18 (tCO2e)	2018/19 (tCO2e)	2019/20 (tCO2e)	2020/21 (tCO2e)
S1	Street lighting energy reduction prog	Area wide	2014/15	250,000	In Progress	3 High	Grid Electricity (kV	970,361	-	489	488	487	487	486	485
B1	Heating time rationilisation	Larbert Library	2014/15	-	Complete	3 High	Natural Gas (kWh)	5,000	-	1	1	1	1	1	1
B2	Heating time rationilisation	Grangemouth L	2014/15	-	Complete	3 High	Natural Gas (kWh)	20,000	-	4	4	4	4	4	4
B3	Heating time rationilisation	Stenhousemuir	2014/15	-	Complete	3 High	Natural Gas (kWh)	15,000	-	3	3	3	3	3	3
B4	Heating time rationilisation	Woodlands Gan	2014/15	-	Identified/More Inf	3 High	Natural Gas (kWh)		-	-	-	-	-	-	-
B5	Heating time rationilisation	Boness Town H	2014/15	-	Complete	3 High	Natural Gas (kWh)	125,000	-	23	23	23	23	23	23
B6	Heating time rationilisation	Grangemouth T	2014/15	-	Identified/More Inf	3 High	Natural Gas (kWh)		-	-	-	-	-	-	-
B7	Boiler Optimisation	Cunningham Hc	2014/15	2,708	In Progress	2 Medium	Natural Gas (kWh)	61,333	-	11	11	11	11	11	11
B8	Cavity Wall Insulation	Grangemouth E	2014/15	4,113	Complete	2 Medium	Natural Gas (kWh)	27,420	-	5	5	5	5	5	5
B9	Lighting upgrade as part of rewire	Nethermains PS	2015/16	45,261	Full Details Develo	3 High	Grid Electricity (kV	43,759	-	-	-	-	22	22	22
B10	Lighting upgrade as part of rewire	Beancross PS	2015/16	45,261	In Progress	1 Low	Grid Electricity (kV	43,759	-	-	-	-	22	22	22
B11	Heating replacement	Nethermains PS	2015/16	-	In Progress	1 Low	Grid Electricity (kV	-	-	-	-	-	-	-	-
B12	Heating replacement	Beancross PS	2015/16	-	In Progress	1 Low	Grid Electricity (kV	-	-	-	-	-	-	-	-
1	Conversion of 70w SON lanterns to modern LED equivalent	Area wide	2015/16	500,000	Full Details Developed	3 High	Grid Electricity (kWh)	675,425	-	-	340	339	339	338	338
12	Install PV array at St Mungos High School	St Mungos HS	2013	62,459	Complete	3 High	Grid Electricity (kWh)	25,500	-	-	-	-	-	-	-
3	Replace incinerators at crematorium with more energy efficient equipment	Falkirk Crematorium	2016/17	3,000,000	Funding Approved	3 High	Natural Gas (kWh)	10	-	-	0	0	0	0	0
5	Replace air handling unit at Mariner Centre	Mariner Centre	2014/15	130,000	Funding Approved	3 High	Grid Electricity (kWh)	10	-	0	0	0	0	0	0
18	LED lighting, high schools, classrooms, outdoor lighting	Mitie high schools	2014/15	-	Complete	3 High	Grid Electricity (kWh)	23,093	-	12	12	12	12	12	12
	SUM								**-**	**547**	**887**	**885**	**928**	**927**	**926**

N.B. Correct at 28/04/2015. Project list is constantly developing. For latest version contact the Climate Change Team.

Total excludes any repayment of loans

Figure 15: Stage 4 CMP Projects – Business Case Developed & Awaiting Funding

Project Ref	Project Description	Locality	Capital Spend Year	Capital Cost (£)	Project Status	Estimate confidence	Type of Emission Saving	Carbon Cost Effectiveness (£/tCO2e)	2014/15 CO2e (T)	2015/16 CO2e (T)	2016/17 CO2e (T)	2017/18 CO2e (T)	2018/19 CO2e (T)	2019/20 CO2e (T)	2020/21 CO2e (T)
7.	HQ replacement project Rationalising 3 major office GAS	Falkirk	2016/17	20000000	Awaiting final confirmation from Members	High	GAS (kWh)	-	-	-	-	330	330	330	330
8.	HQ replacement project Rationalising 3 major office ELECTRICITY	Falkirk	2016/18	20000000	Awaiting final confirmation from Members	High	Grid Electricity (kWh)	-	-	-	-	551	551	550	549
16.	Energy efficient equipment at replacement library at Denny Town Centre	Denny	2016	0	Design stage Funding confirmed	High	Grid Electricity (kWh)	-	-	-	-				
	SUM							-	-	-	-	**881**	**881**	**880**	**879**

Note: In the above table, the capital elements relating specifically to gas and electricity reduction have not yet been separately costed although approximate energy savings have been estimated.

Figure 16: Stage 3 CMP Projects- Scoping - Business Case Under Development

Ref.	Project Description
P1	Awareness & Behavioural Change Schools electricity only
19	IT efficiency programme - collection of projects
B1.04	Installing electric vehicle charging points at 2 Council offices
D1.07	Set up fleet management system to use tracking system data to identify opportunities for efficiencies e.g. route optimisation, utilisation levels of various vehicles
B1.14	Introduce Council heating management approach to set parameters around best practice in heating to avoid excessive or wasteful heating of premises.
B1.16	Future waste collections - food and other recyclate collections will be extended to reach higher targets.
D1.04	Testing electric and hybrid vehicles - 8 diesel hybrids, 1 petrol hybrid, 4 fully electric and 10 with 'light foot' technology to optimise fuel use when driving.
D1.08	Corporate move to use of multi-functional devices (MFDs) replacing high number of individual energy intensive machines e.g. printers, scanners, fax machines.
N1.32	Dimming and trimming of street lighting
B1.07	Secure & facilitate Fuel Good driver efficiency training for fleet & business drivers

Figure 17: Stage 2 CMP Projects Undergoing Feasibility Study

Ref	Project Description
10	Awareness & Behavioural Change Council wide
32	Rationalise Community Trust portfolio
B1.07	Secure and facilitate Fuel Good driver efficient driver training for Development Services staff.
D1.20	Grey fleet review to assess carbon impact of staff using their own vehicles on Council business
J1.06	LED lights Bowhouse Community Education
J1.06	Climate Change Team & Education Services IT Team & estates staff to agree holiday shut down procedure to minimise energy use from non-essential equipment when buildings are closed for longer periods.
J1.07	Auto light switches installed at Bowhouse Community Hall
N1.09	High Flats upgrade (thermal improvements) 4 blocks over 2 years - 320 flats
N1.10	SHQS/EESM housing improve heating (2,500 this year). Floor, cavity, roof insulation approx. 500 this year.
N1.26	LED lighting for close/stair lighting (previously blocked as Salix was seen as a loan)
N1.27	Review of Housing Land lord Supplies (close/stair lighting)

Figure 18: Stage 1 CMP – Concept

Ref	Project Description
9	Enable energy saving settings on PCs
35	Identify opportunities for energy efficiency projects in high schools, working in conjunction with C98 & Gateway
39	Identify opportunities for water efficiency projects in high schools, working in conjunction with C98 & Gateway
B1.01	Trial boiler optimisation on Community Trust estate
B1.12	Green waste composting on site rather than transporting to central recycling - cuts skip charges.
D1.21	IT data storage opportunities for energy/carbon savings e.g. virtualisation of servers
N1.17	Insulate building envelope at Sealock House
J1.12	Co-ordinate out of hours use of SCHOOLS by community groups to optimise energy efficiency
J1.15	Co-ordinate out of hours use of Education managed NON SCHOOL buildings by community groups to optimise energy efficiency
D1.15	Reduced hours for primary schools is a possibility as a result of budget cuts.

Appendix B – Details of Previous Carbon Reduction Projects

Ref.	PAST PROJECTS	CO2 savings achieved p.a.(T)	Status	Project Origin
1	Awareness and behavioural change programme	961	Implemented	CMP #1
2	Annual Programme of energy efficient projects	613	Implemented	CMP #1
3	Annual Programme of lighting upgrades	99	Implemented	CMP #1
4	Implement & operate revised Energy Management Agreement	718	Implemented	CMP #1
5	Sustainable design and build of 4 new high schools	0	Ltd implement	CMP #1
6	Review office and depot accomm.	0	Not Implemented	CMP #1
7	Install vehicle tracking and programme of driver training	0	Ltd implement	CMP #1
8	Reduce staff business mileage	6	Ltd implement	CMP #1
9	Energy Efficient Equipment Procurement Policy	0	Not Implemented	CMP #1
10	Reduce IT equipment emissions	0	Part Implementd	CMP #1
11	Street Lighting emission reduction feasibility studies	1	Ltd implement	CMP #1
12	Sustainable procurement and new build policy	0	Not Implemented	CMP #1
13	Low CO2 Vehicles	237	Complete	CMP #2
14	Route planning/ vehicles tracking - waste management	194	Complete	CMP #2
15	Professional driver training & CPD	162	Started	CMP #2
16	Extend district heating scheme to Callendar House	27	complete	CMP #2
17	Pool covers at Mariner Centre	65	complete	CMP #2
18	Solar PV	16	Complete	CMP #2
19	Install fuel bunker at Kinneil Kerse	15	Complete	CMP #2
20	Grangemouth sports centre - replace lighting	13	Complete	CMP #2
21	Install solar water heater systems at 2 schools	5	Complete	CMP #2
22	Install LED Panels at Grangemouth HS	10	Complete	CMP #2
23	Eco Drive EDA on refuse vehicles	14	Started	CMP #2
24	Driver efficiency training for high mileage drivers	10	Complete	CMP #2
25	Extend use of pool car scheme	18	Complete	CMP #2
26	Various staff travel initiatives	263	Complete	CMP #2
27	NPDO swimming pool close control	44	Complete	New
28	Install PV panels at Falkirk HS	0	Cancelled	New
29	Callendar House LED system	25	Complete	New
30	Grangemouth sports complex pump improvements	25	Complete	New
31	Grangemouth sports complex small pool cover	16	Complete	New
Sum		**3556**		

Figure 19.

Note:

CMP#1: Carbon Management Plan 1

CMP#2: Carbon Management Plan 2

New: projects identified subsequent to the 2nd Carbon Management Plan

Appendix C – Projected CO2 Emissions& Costs 2013/14 to 2020/21

	YEAR															
	2013/14		2014/15		2015/16		2016/17		2017/18		2018/19		2019/20		2020/21	
	tCO2e	£	tCO2e	£	tCO2e	£	tCO2e	£	tCO2e	£	tCO2e	£	tCO2e	£	tCO2e	£
BAU Carbon Footprints	48,844	17,466,043	52,519	18,044,824	51,884	18,451,439	52,735	18,899,418	53,608	19,365,853	54,503	19,851,295	55,633	20,830,600	56,575	21,360,182
Project Savings	-	-	-	-	547	113,796	887	189,137	2,381	393,850	3,037	429,224	3,035	436,699	3,033	444,199
Forecast after Project Savings	48,844	17,466,043	52,519	18,044,824	51,337	18,337,643	51,848	18,710,281	51,227	18,972,003	51,466	19,422,072	52,598	20,393,901	53,543	20,915,983

Figure 20.

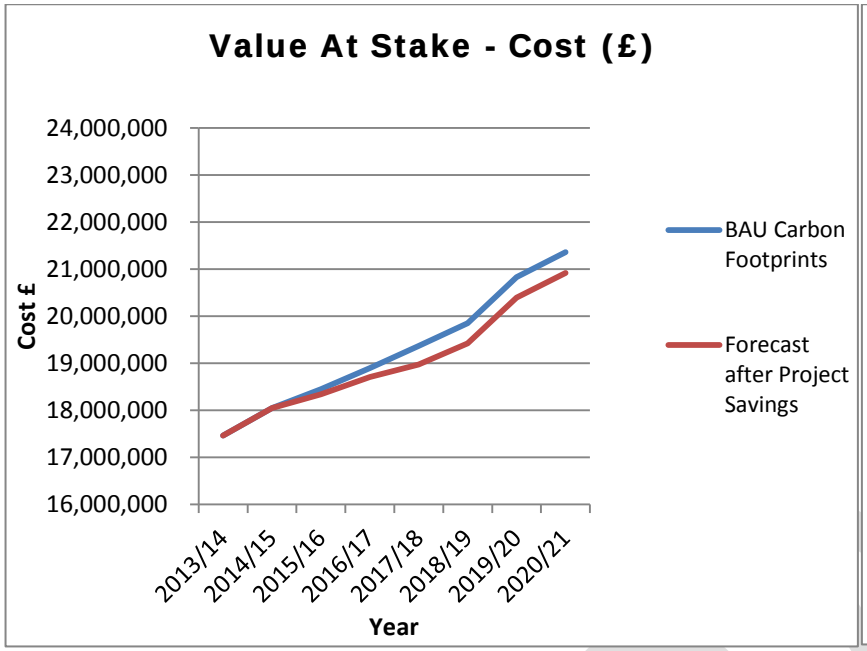


Figure 21.

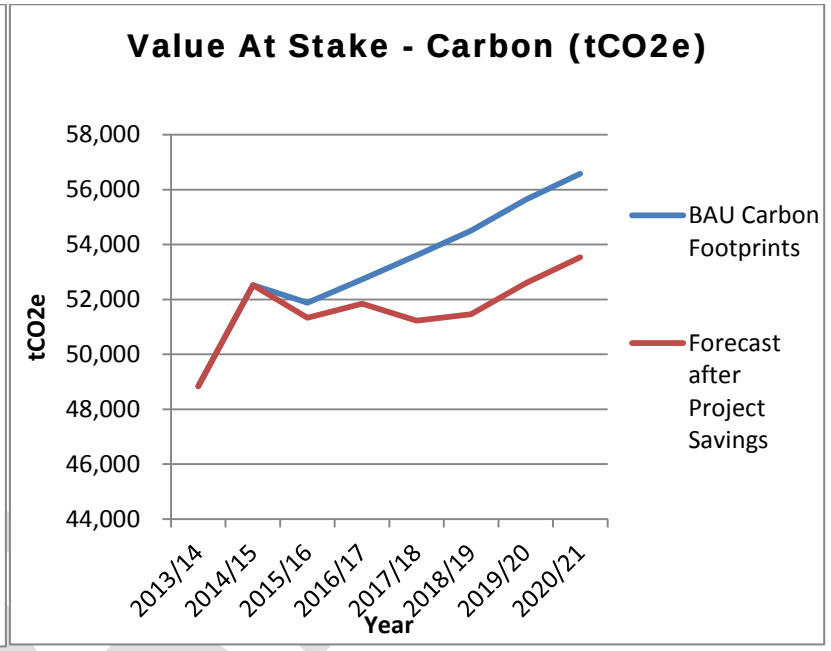


Figure 22.

Appendix D –Projection Methodology & Data Sources

Business as Usual Projections used in this document were based on the following assumptions, which used budget projects supplied by Finance Services, drawing on advice from specialist officers where possible:

Component	Projection Assumption
All buildings gas	Assume continued 2% increase in units used and unit price increase at 2% p.a. Finance projection was a simple 6% cost increase p.a.
All buildings electricity	Assume continued 2% increase in units used and unit price increase at 2% p.a. Finance projection was a simple 6% cost increase p.a.
All buildings oil	Assume continued 2% increase in units used and unit price increase at 2% p.a.
Staff travel by car	Assume 3.6% decrease in miles claimed p.a. based on trends since 2005/06. Cost - keep unit cost stable @ £0.45 per mile.
Fleet travel litres diesel	Financial Services have budgeted for 8% increase in cost p.a. Assume units of fuel used to increase by 4% p.a. based on data from 2010/11 to 2013/14. Assume cost increase of 2% p.a. to align with Finance estimates..
Street lights electricity	Units - BAU - project 10% in 2014/15 reflecting recently improved data capture, with 2% increase in electricity cost. Thereafter, increase 2% increase in units & 2% increase in energy cost per unit.
Water	Units - In light of limited data available on previous use, assume that units consumed and disposed plus costs for both remain stable until further advised. Assume disposal quantity is 95% of supply. Cost – use RES indicative costings with 3% annual increase for both consumption & disposal.
Waste	**UNITS** - Assume return to slightly higher 2012 total arisings in period 2015/16, as suggested by Falkirk Council Zero Waste Plan. **COST** Finance Services have budgeted for annual cost increase of 3.15% for landfill for lifetime of project. In recognition of complexity of projecting waste related costs, the cost projections are based on a simple 1% annual increase – a generic public sector cost projection provided by Resource Efficient Scotland in their CMP projections tool. These costs were calculated completely independently of the Falkirk Council Waste Management Service.
Staff travel public	Data is not yet available.
Staff travel air	Data is not yet available.

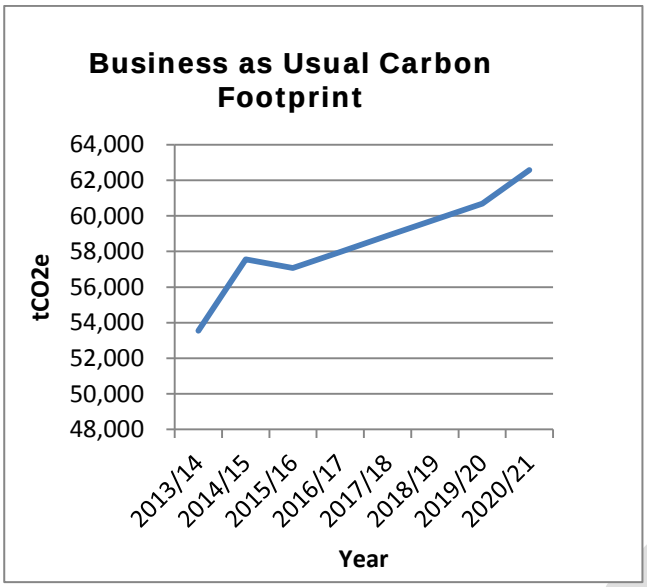
Figure 22

Data Sources:

Component	Data Source
Natural Gas (kWh)	Energy Officer, Energy Management Unit
Grid Electricity (kWh)	Energy Officer, Energy Management Unit
Gas oil (kWh)	Energy Officer, Energy Management Unit
Car - diesel (passenger km)	Payroll Officer, Payroll Services
Diesel (litres)	Fleet Co-ordinator, Operational Services
Grid Electricity (kWh) street lighting	Street Lighting Engineer, Street Lighting Team
Water - Supply (m3)	Energy Officer, Energy Management Unit
Water - Treatment (m3)	Energy Officer, Energy Management Unit
Refuse Municipal to Landfill (tonnes)	Assistant Waste Strategy Co-ordinator
Paper & Board (Mixed) Recycling (tonnes)	Assistant Waste Strategy Co-ordinator
Refuse Mun/Comm/Ind to Combustion (tonnes)	Assistant Waste Strategy Co-ordinator
Taxi (passenger km)	TBC
Flights (passenger km)	TBC

Figure 23

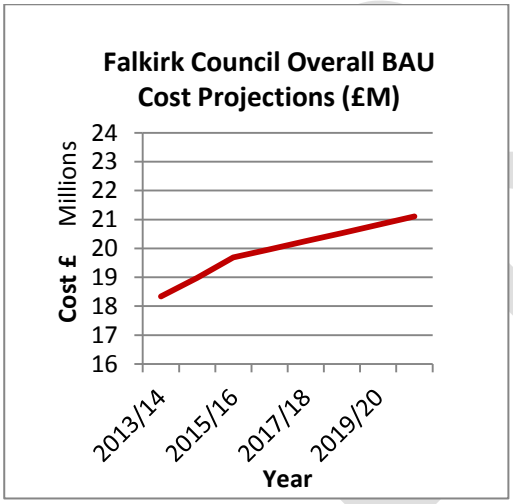
Figure 24: Changes in Consumption Levels:



Item	Projected Consumption Change
Street lighting (elect)	+10% (yr1) then +2%
Electricity (buildings)	+2% p.a.
Gas (buildings)	+2% p.a.
Oil (buildings)	+2% p.a.
Water	0% p.a.
Waste	0% p.a.
Staff travel	-3.6% p.a.
Fleet (diesel)	+4% p.a.

This graph examines how, based on patterns to date, consumption rates projected to change over a five year period, denoted by the CO_2 emissions associated with them.

Figure 25: Changes in Costs Associated with Carbon



Item	Projected Cost Change per unit
Street lighting (elect)	2% p.a.
Electricity (buildings)	2% p.a.
Gas (buildings)	2% p.a.
Oil (buildings)	2% p.a.
Water	3% p.a.
Waste	1% p.a.
Staff travel	0% p.a.
Fleet (diesel)	2% p.a.

This graph depicts how the **costs** associated with carbon emissions are projected to change over the five year period of this plan. To clarify the role of changing unit prices, this calculation is based on the assumption that consumption rates remain stable.

Appendix E - Legal Drivers

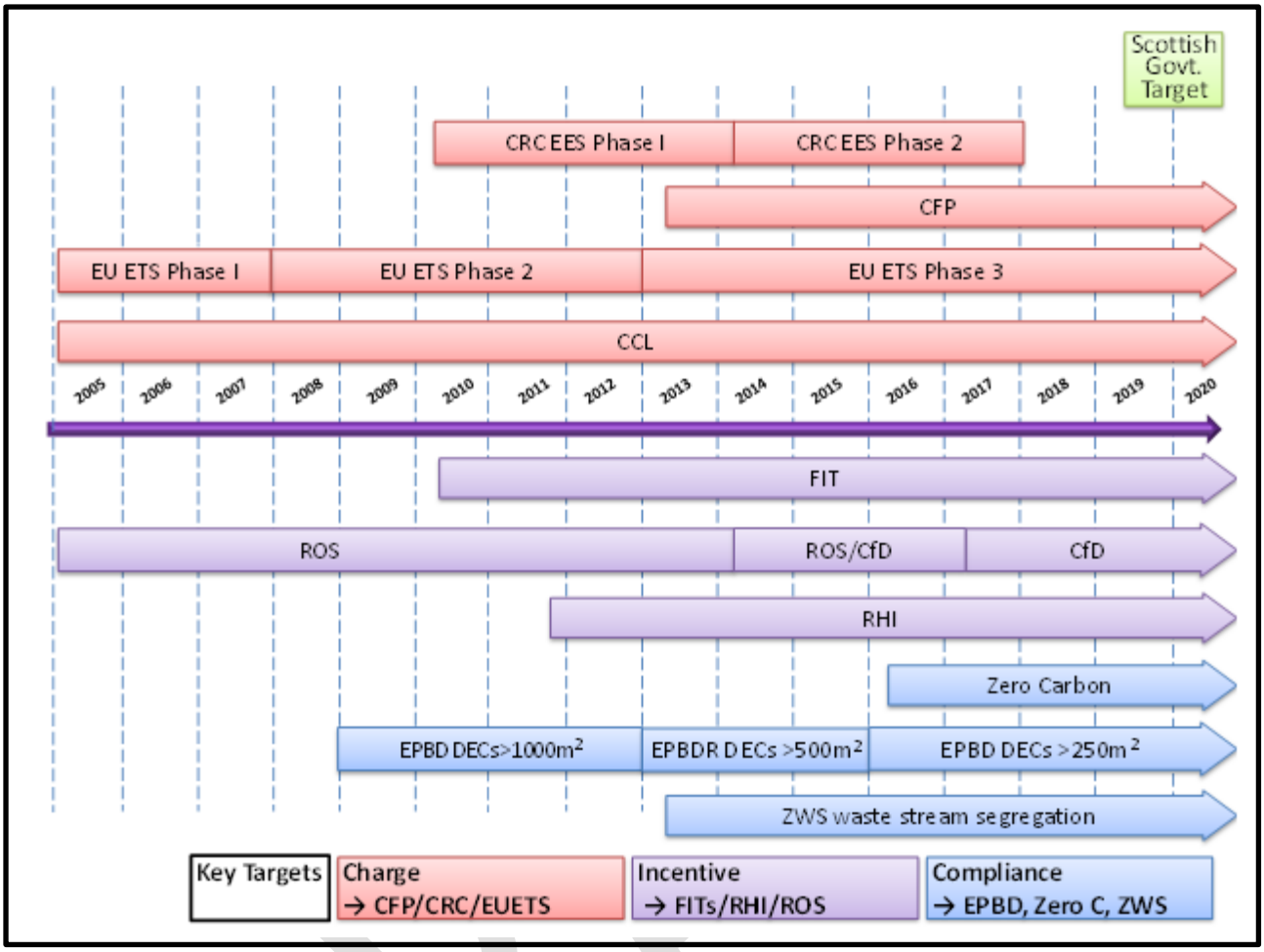


Figure 26: Legislative & Policy Drivers

CRC EES – Carbon Reduction Energy Efficiency Scheme (www.gov.uk/crc-energy-efficiency-scheme-qualification-and-registration)

CFP – Carbon Floor Price (www.hmrc.gov.uk/climate-change-levy/carbon-pf.htm)

EU ETS – European Union Emissions Trading Scheme (www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050/supporting-pages/eu-emissions-trading-system-eu-ets)

CCL- Climate Change Levy (www.hmrc.gov.uk/climate-change-levy/)

FiT – Feed In Tariff (www.gov.uk/feed-in-tariffs/overview)

ZWS-Zero Waste Plan Scotland (www.zerowastescotland.org.uk/)

ROS – Renewable Obligation Scheme (www.ofgem.gov.uk/environmental-programmes/renewables-obligation)

CfD – Contracts for Difference (www.gov.uk/government/publications/electricity-market-reform-contracts-for-difference)

RHI – Renewable Heat Incentive (www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/renewable-heat-incentive-rhi)

EPBDR – Energy Performance in Buildings Directive (www.gov.uk/government/policies/improving-the-energy-efficiency-of-buildings-and-using-planning-to-protect-the-environment/supporting-pages/energy-performance-of-buildings)

Targets linked to the Climate Change (Scotland) Act 2009 :

1. 42% reduction of Green House Gases (or carbon dioxide equivalent) based on 1990 levels
2. Deliver the equivalent of at least 50% of gross electricity consumption from renewables by 2015 and 100% of gross electricity consumption from renewables by 2020
3. Source 11% of heat demand from renewable sources by 2020, and have a largely decarbonised heat sector by 2050
4. Reduce final energy demand in Scotland by 12% by 2020 relative to2005-2007 average demand, covering all fuels and sectors
5. Meet at least 30% of overall energy demand from renewables by 2020.
6. Enable local and community ownership of at least 500MW of renewable energy by 2020
7. Demonstrate carbon capture and storage (CCS) at commercial scale in Scotland by 2020, with full retrofit across conventional power stations thereafter by 2025-30.
8. To seek transmission system upgrades and increased interconnection capable of supporting the projected growth in renewable capacity.

Source: Reducing emissions in Scotland 2015 progress report Committee on Climate Change March 2015 page 15-16 https://www.theccc.org.uk/wp-content/uploads/2015/01/Scotland-report-v6-WEB.pdf

Appendix F – Falkirk Council CO2 Footprint Emissions 2005/06 – 2013/14

	CO2 (t)				CO2 (t)					% change 05/06-13/14	% change 12/13-13/14
Component	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14		
Building gas (excl. CHP)	11,667	5,908	8,097	9,796	13,159	14,514	14,466	16,193	14,855	27%	-8%
Building oil	88	142	57	119	154	158	196	227	215	145%	-5%
Building electricity	18,133	13,893	13,375	15,461	18,830	19,562	16,535	19,755	17,133	-6%	-13%
Vehicle fuel	4,164	4,130	3,711	3,910	4,176	4,143	4,417	5,074	4,518	9%	-11%
Business mileage	1,028	1,078	1,049	1,047	995	894	856	821	777	-24%	-5%
Streetlights, etc.	4,910	4,966	4,989	5,028	4,989	5,020	5,133	5,533	5,874	20%	6%
Total emissions	39,990	30,116	31,277	35,362	42,302	44,291	41,604	47,604	43,372	8%	-9%
% change from 2005/6	0	-25%	-22%	-12%	6%	11%	4%	19%	8%		
% change from previous year		-25%	4%	13%	20%	5%	-6%	14%	-9%		

N.B. Data relating to the period 2013/14 is calculated slightly differently than in previous years, reflecting refinements in carbon accountancy methodology. Emissions relating to electricity have been adjusted to have a reduced CO_2 emission factor, reflecting changes to the composition of energy supply to the National Grid. This effectively reduces the CO_2 emissions arising from electricity in buildings and street lighting in 2013/14 by around 3,000 tonnes CO_2 compared with previous years.

Scope 1
Direct emissions that an organisation is responsible for and include on-site fuel use e.g. natural gas and fuel use in company owned vehicles

Scope 2
Indirect emissions - those caused by the generation of grid electricity

Scope 3
Indirect emissions arising elsewhere from an organisation's activities e.g. air travel, waste disposal, water supply & treatment and grid electricity transmission and distribution. These should be included where an organisation feels that it has sufficient control and is able to collect data to make an assessment

Appendix G– Scopes – Previous CMP Scope Versus Revised Scope

Component	2013/14	Split	2013/14	Split
Building gas	15,013	35%	15,013	28%
Building oil	204	0%	204	0%
Vehicle fuel (fleet diesel)	4,501	10%	4,501	8%
Building electricity	17,550	41%	17,550	33%
Street lighting	5,125	12%	5,125	10%
Business mileage	840	2%	840	2%
Water	-	-	236	0%
Waste	-	-	10,069	19%
Sum	**43,233**	**100%**	**53,538**	**100%**

Figure 28: Scope of Carbon Management Plans Over Time

When reporting on greenhouse gas emissions, the accepted global methodology put forth by the Greenhouse Gas Protocol,[5] a partnership between the World Resources Institute and the World Business Council for Sustainable Development.

The protocol divides emissions into various scopes of production, ranging from direct emissions from production to indirect emissions due to employee travel and the lifecycle use of produced goods. The GHG Protocol divides emissions into 3 Scopes:

Scope 1 - Direct emissions that an organisation is responsible for and include on-site fuel use e.g. natural gas and fuel use in company owned vehicles
Scope 2 - Indirect emissions - those caused by the generation of grid electricity
Scope 3 - Indirect emissions arising elsewhere from an organisation's activities e.g. air travel, waste disposal, water supply & treatment and grid electricity transmission and distribution. These should be included where an organisation feels that it has sufficient control and is able to collect data to make an assessment

Appendix H – Summary of Population & Staff Number Changes Over Time

Figure 29: Population of Falkirk Council Area Over Time

Year	Population	Change %
2005	150,130	
2006	151,090	
2007	152,320	
2008	153,290	
2009	154,210	
2010	155,150	
2011	156,250	
2012	156,800	
2013	157,140	+4%

Figure 30: Falkirk Council Employee Numbers Over Time

Year	Staff no.s.	Change %
2005	7500	
2006	7700	
2007	7700	
2008	8000	
2009	8100	
2010	8000	
2011	8000	
2012	7400	
2013	7500	0%

Appendix J – Funding Details of CMP 3 Projects

Project Description	Commissioning Year	Capital Cost (£)	Funding Source
Street lighting energy reduction programme - area wide	2014/15	250,000	Spend to save Budget (Year)
Awareness & Behavioural Change Schools electricity only	2015/16	2,000	CEEF
Awareness & Behavioural Change Non Schools Electricity only	2015/16	2,000	CEEF
Heating time rationalisation - Larbert Library	2014/15	0	No cost
Heating time rationalisation - Grangemouth Library	2014/15	0	No cost
Heating time rationalisation - Stenhousemuir Sports Centre	2014/15	0	No cost
Heating time rationalisation - Woodlands Games Hall	2015/16	0	No cost
Heating time rationalisation - Bo'ness Town Hall	2014/15	0	No cost
Heating time rationalisation - Grangemouth Town Hall	2015/16	0	No cost
Boiler Optimisation	2014/15	2,708	Capital Budget
Cavity Wall Insulation - Grangemouth Enterprise Centre	2014/15	4,113	Capital Budget
Lighting upgrade as part of rewire - Nethermains P.S.	2017/18	45,261	Capital Budget
Lighting upgrade as part of rewire - Beancross P.S.	2017/18	45,261	Capital Budget
Heating replacement - Nethermains P.S.	2017/18	0	Capital Budget
Heating replacement - Beancross P.S.	2017/18	0	Capital Budget
Conversion of 70W SON lanterns to modern LED equivalent	2015/16	500,000	Salix Fund
Install PV array at St Mungo's High School	2013	62,459	Corporate Sustainability Budget
PV installation on variety of primary schools	2014/15	0	Solar Schools (Co-op UK)
Replace incinerators at Falkirk Crematorium with more energy efficient equipment	2015/16	TBC	TBC - element of £3M project
Replace air handling unit at Mariner Centre	2014	130,000	Falkirk Council Capital Budget 2015/16?
LED lighting replacement project at Bo'ness Recreation Centre	2014/15	25,000	Capital Budget
LED lighting at Class of 98 high schools in various classrooms, outdoor lighting	2014/15	0	Mitie
Upgrade of heating system at Bankeir PS	2013/14	420,000	Capital Budget
HQ replacement project rationalising 3 major offices GAS	2016/17	TBC	TBC - element of £20M project
HQ replacement project rationalising 3 major offices ELECTRICITY	2016/17	TBC	TBC - element of £20M project
Energy efficient equipment at replacement library at Denny Town Centre	2016/17	0	Capital Budget
Area wide waste management programme to reduce landfill & increase recyclate levels	2015 - 2021	TBC	Waste management budget

Figure 31: Funding Details of CMP 3 Projects

Appendix K – Terms of Reference & Key Risks - Corporate Sustainability Working Group

Group Remit: The role of this group is to ensure that that in exercising its functions, Falkirk Council meets the requirements of the Climate Change Public Bodies Duties, namely to:

- **Act sustainably** – embed an economic, social and environmental balance
- **Contribute to carbon emissions reduction/** mitigation to minimise any contribution to green house gases
- **Contribute to climate change adaptation**, working with colleagues, communities and partners to cope with changing weather and how that impacts on us all

The group comprises senior officer representatives from each Service and Elected Member representation, with specialist knowledge officers invited as appropriate. The group is facilitated by the Climate Change Team which alerts it to emerging sustainability issues and progresses recommendations of the group.

Each Service is expected to send representation to the quarterly meetings, delegating alternative officers if the designated representative is unable to attend. Service representatives will act as a conduit on sustainability information to and from their service, with the chair and elected members ensuring a flow of information to and from the Corporate Management Team and the Executive.

Objectives	**Risks**	**Governance**	**Frequency**
(1) To monitor emerging sustainability and climate change related issues, and to develop strategies to meet legal obligations, corporate objectives and plans. (2) To develop and monitor the implementation of corporate sustainability plans, policies and targets, related to, for example: a) Environmental management b) Waste reduction c) Resource efficiency d) Sustainable transport e) Sustainable procurement f) Climate change- carbon management & adaptation (3) To share best practice amongst services (4) To report internally and publicly on progress with delivering Public Body Duties arising from the Climate Change (Scotland) Act 2009.	Failure to comply with statutory obligations, for example: EU directives on waste Strategic Environmental Assessments Climate change associated duties and targets Failure to respond to financial challenges and inefficiency e.g. Energy related costs Waste related costs Whole life costing Climate change and its impact on communities, the economy, assets and services. Reputational damage to the Council Failure to fulfil commitments made in Scotland's Climate Change Declaration e.g. minimising carbon emissions Failure to align the Council's operations with	<u>Internally</u>: Reports to Corporate Risk Management Group and Corporate Management Team Reports to Elected Members <u>Externally</u> Publicly report on corporate performance in terms of sustainability, carbon reduction & adapting to climate change.	4 x p.a. 1 x p.a. 1 x p.a.

	national and corporate policy commitments		
Associated Officer Working Groups: • Carbon Management Group (steer carbon management plan) • Carbon Officers Group (officers leading carbon projects) • Service sustainability teams (1 per service + the Community Trust)	Chair: Director, Development Services	Members: Community Trust Claire Mennim Corporate & Housing Services David McGhee Development Services John Angell, Russell Cartwright, Robert McMaster, Alan Urquhart, Mari Claire Riley, Douglas Evans, Brenda Roddy Children's Services Gary Greenhorn, Kirsty Wilsdon Social Work Representation TBC Elected members Cllr Dr Craig R Martin	

Strategy & Delivery

The Climate Change Scotland Act 2009 means that public bodies such as Falkirk Council must build consideration of sustainability and climate change into everything that they do.

Falkirk Council established the Corporate Sustainability Working Group in 1998 to ensure that sustainability is embedded in its operations and policies. The strategic direction has been set by the group in an overarching strategy, with delivery by means a series of action plans:

Sustainable Development & Climate Change Strategy 2012-2017
Adopted in 2012, the strategy outlines the general approach that the Council plans to take over a 5 year period and is reported on annually

Sustainability & Climate Change Action Plan 2013-15
Adopted in 2013, the action plan contains over 100 actions that will contribute to delivery of the higher level strategy. Whilst the Council leads on some of the actions, the majority are being carried out by other groups in the area such as community groups, community planning partners and the private sector. Progress on delivering the actions will be reported publicly on annual basis.

Carbon Management Plan 2011-2015

The plan sets out short, medium and longer term carbon reduction targets, outlining plans for delivery through a programme of projects.

Scotland's Climate Change Declaration
The Council signed up to Scotland's Climate Change Declaration in 2007 which included 7 key commitments on climate change. In light of the Council's public body duties arising from Scottish climate change legislation, it reports publicly on action to address sustainability and climate change through a report submitted to the Sustainable Scotland Network.

Corporate Sustainability Group Governance Structure