The Highland Council

Resources Committee – 25th November 2015

Agenda Item	**28(a)**
Report No	**RES/ 119/15**

Annual Progress Report on the Carbon Management Plan, 2014/15

Report by Head of Policy and Reform

Summary

This report reviews the Council's performance in meeting the targets outlined in the Carbon Management Plan (CMP) for 2014/15. In 2014/15, carbon emissions have increased 1% or 440 tonnes CO_2 equivalent (tCO_2e) compared to 2013/14; although against the base-line year of 2011/12 carbon emissions have decreased by 4%. The target reduction over that period is 9%.

The 1% increase from the previous year arises from increased emissions in 2014/15 from energy, waste, water consumption and street lighting which were not offset by decreases in emissions from fleet and staff travel.

Although carbon emissions have increased in 2014/15 compared to the previous year, total costs have decreased by 6%, saving £1.22m, with total costs falling from £20.5m (2013/14) to £19.28m (2014/15). This is primarily due to decreasing fuel and energy costs, and decreasing fleet fuel usage. Costs since 2011/12 have fallen by 4%.

Additionally, costs through the Carbon Reduction Commitment Energy Efficiency scheme (CRC payments and known as carbon tax) were £832,289 in 2014/15, increasing from £425,560 in 2013/14 because of changes to the scheme rules.

Actions to improve performance on emissions reductions are proposed for Members to approve.

From 2015/16 the Council will have to mandatorily report on carbon emissions and actions taken on climate change to the Scottish Government through an amendment to the Climate Change (Scotland) Act 2009. To comply, the Council will need to alter how it collects and analyses climate change information.

1. Background

1.1 The Council's progress to reduce its carbon emissions is monitored through its Carbon Management Plan (CMP). This sets out a strategy for reducing carbon emissions and associated costs from those activities that Highland Council can monitor and influence. The Council has a good track record for reducing carbon emissions. Under the previous CMP, the Council reduced its carbon emissions by 12% between 2007/8 and 2011/12, meeting its target of 3% per annum. The Council is currently reporting against the third iteration of its CMP, with a target of a 3% per annum reduction for the period 2013-2020.

1.2 Move to required climate change reporting to Scottish Government

The Highland Council is also a voluntary signatory of Scotland's Climate

Change Declaration (SCCD) and has committed to tackling climate change. In 2009, the Climate Change (Scotland) Act set national targets for the reduction of carbon emissions, and Highland Council has been identified as a "Major Player" in ensuring these targets are met. For the last eight years, the Council has prepared voluntary reports to the SCCD.

1.3 The Scottish Government has passed an amendment to the Climate Change (Scotland) Act which will statutorily require public sector organisations to report on carbon emissions and actions undertaken to tackle climate change from 2015/16. This will impact how the Council collects and analyses carbon emissions data, and will impose firm deadlines for the submission of annual reports (the last working day in November, for reporting on the previous financial year). There will also be more external and public scrutiny of the Council's carbon emissions, and activities undertaken to address climate change.

1.4 Through the Council's Programme, Highland First, the Council are committed to "Helping communities reduce their energy use and costs." Part of achieving this commitment is to review the Council's Carbon Management Plan to align with resources available by September 2016.

2. Summary of overarching trends

2.1 The Council's carbon emissions have decreased by 4% over the past three years, against a target reduction of 9% over that period, despite a 1% increase in emissions in 2014/15, Figure 1 and Appendix 1. Annual carbon emissions can fluctuate for a variety reasons other than success or failure of the measures implemented. The prolonged cool and wet conditions in 2014/15 may have resulted in an increased demand for heating across the Council. Heating is one of the biggest energy demands, and consequently biggest sources of carbon emissions for the Council.

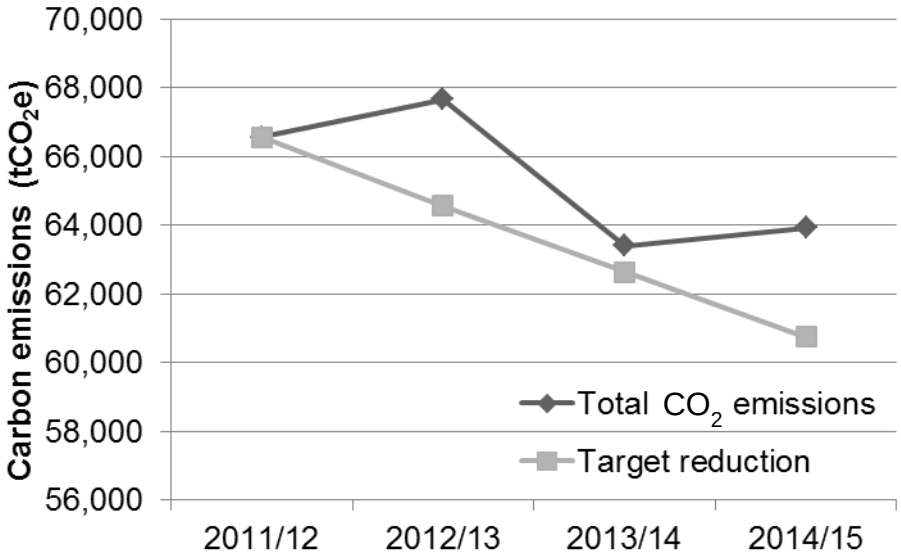

Figure 1: Highland Council carbon emissions (tCO_2e), 2011/12 – 2014/15

2.2 There are six sectors scoped into the CMP: Energy use in buildings; Staff travel; Fleet; Waste; Street lighting; and Water. Table 1 summarises the Council's carbon emissions and target reductions for each of these sectors.

Table 1: Carbon emissions (tCO_2e), 2011/12 – 2014/15.

Sector	Target	Baseline emissions (2011/12)	Emissions Saving Target	Actual Emissions Savings achieved	Change in Emissions 2011/12 – 2014/15
	(%)	Tonnes CO_2e			(%)
Energy use in Buildings	-3 p.a.	42,894	-3,860	-97	-0.2
Staff Travel		3,200	-288	-820	-26
Fleet		9,435	-849	-2,532	-27
Internal Waste (including recycling)		1,039	-94	+152	+13
Street Lighting		9,591	-863	+434	+5
Water		412	-37	+67	+16
Total	**- 9**	**66,571**	**-5,991**	**-2,796**	**-4**

2.3 Energy use in buildings accounts for the largest proportion of Council emissions (67%), followed by street lighting (16%) and fleet emissions (10%), Figure 2.

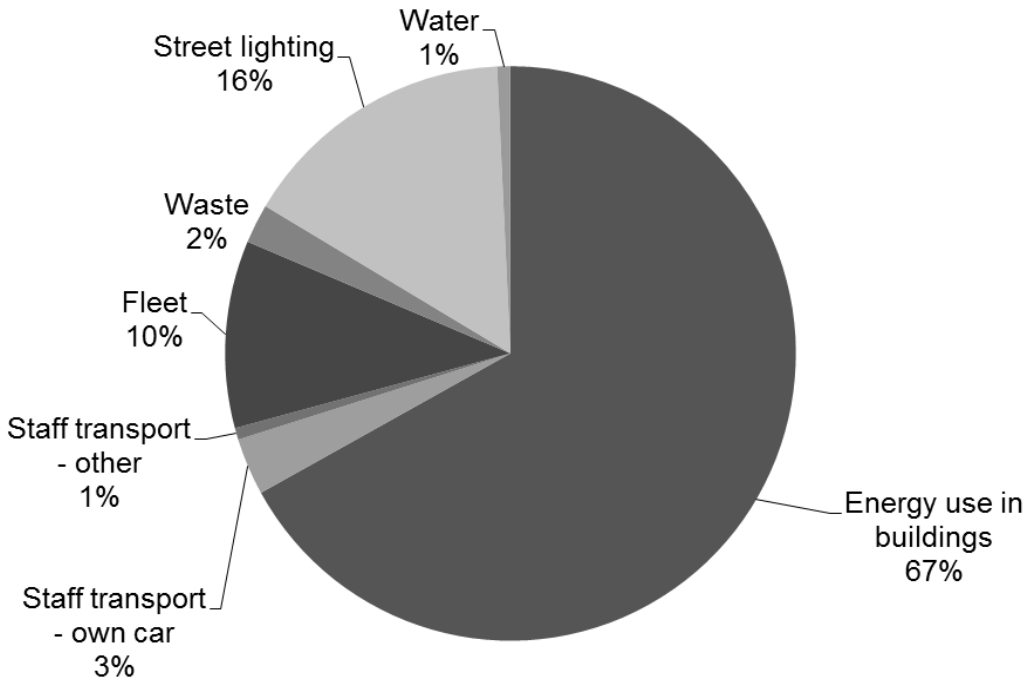

Figure 2: Carbon emissions by sector (2014/15)

2.4 Staff Travel, Fleet and Water account for a much larger percentage of costs than their carbon emissions would suggest as shown in Figure 3. Reductions in these areas have largely been driven by budget savings and work to encourage business travel only when face to face meetings are essential.

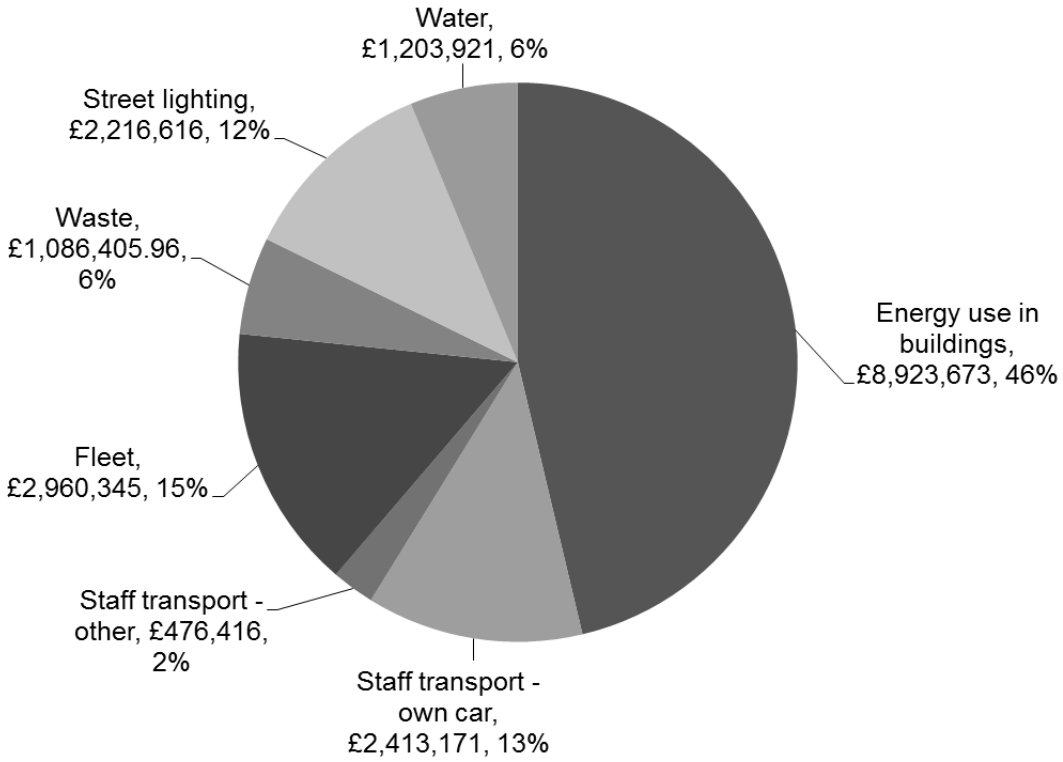

Figure 3: Costs by sector (2014/15)

2.5 Total costs associated with the carbon emissions scoped into the CMP are outlined in Appendix 2. Overall, costs have decreased 6% (£1,224,403) in 2014/15 compared to 2013/14, primarily as a result of falling energy and fuel prices, in combination with reduced consumption.

2.6 Compared to 2011/12, fleet fuel usage has decreased 27%, with costs reducing 23% (£897,020). Total staff travel costs have reduced by £737,058 (20%) compared to 2011/12, because of a 25% reduction in the amount of business mileage claimed by staff traveling in their own car (saving £546,998 compared to 2011/12), and a 28% decrease in staff travel by other means (public transport and car hire) saving £189,518 over the same period. Car hire mileage has reduced 30% (371,155 miles) saving £194,586, a 35% reduction in costs compared to 2011/12. A more detailed breakdown of staff travel is presented in section 5. Water costs have reduced by 28% (saving £464,052) despite consumption increasing by 17% (138,944 m^3) in 2014/15 compared to 2011/12 due to better metering.

2.7 There are additional costs to the Council relating to carbon emissions under payments required by the Carbon Reduction Energy Efficiency Scheme (CRC). In 2014/15, the scope of emissions covered under the CRC was expanded to include energy used for street lighting. This expanded scope and an increase in the price of carbon offsets from £12 per tonne CO_2e (tCO_2e) to £16 per tCO_2e has increased the Council's CRC payments from £424,560 in 2013/14 to £832,289 in 2014/15. The Council was able to reduce its CRC payment slightly by pre-paying for the majority of its offset credits in advance, securing a lower price per credit. The Council can significantly

reduce its CRC payments by reducing its carbon emissions.

3. Energy use in buildings

3.1 Progress in this sector is fundamental to ensure the overall targets of the CMP are achieved. In 2014/15, carbon emissions related to energy use in buildings increased by 6% (2,467 tCO_2e) relative to 2013/14, Appendix 1. This is most likely due to the prolonged cool and wet spring conditions in 2015 resulting in an increased demand for heating across the Council. Over the baseline year of 2011/12, emissions from Energy use in buildings have decreased 0.2% (97 tCO_2e).

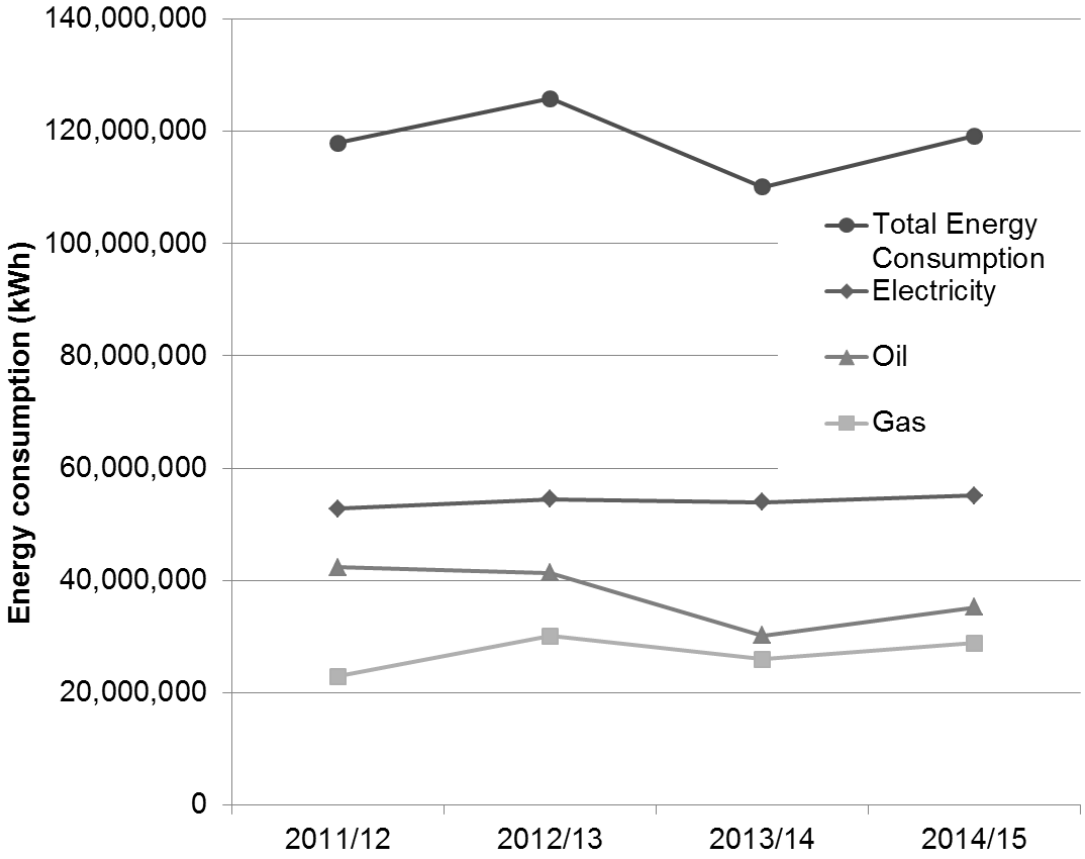

Figure 4: Energy consumption in buildings, by fuel type, 2014/15

3.2 It was reported to Resources Committee in November 2014 that energy use in Public Private Partnership (PPP) properties had been increasing and was impacting progress towards energy reduction targets. The 14 PPP properties account for 10% of energy use across the Council estate and therefore have a significant impact on overall energy trends. Energy use in PPP properties has decreased by 4% in 2014/15, compared to 2013/14, although it is still 1% higher than the baseline year (2011/12).

3.3 The effect of fluctuations in the cost of energy can also be noted in the CMP data. For example, electricity usage has increased by 5% from 2011/12 to 2014/15, but costs have increased by 31% over the same time period. Continuing efforts to reduce energy consumption and where possible increase the Council's capacity to generate its own energy through renewables will reduce the impact of rising energy costs on the Council.

3.4 The Council has been investing in renewable energy on its own estate for over a decade. The major focus of this has been the replacement of carbon intensive oil and electric based heating systems with renewable heating systems such as biomass boilers. In 2014/15, 13% of the energy used in the Highland Council's buildings came from biomass heating, up 3% from last year. Carbon emissions from oil use have reduced 22% compared to 2011/12, and costs from purchasing heating oil has decreased by £1,287,261. This investment in biomass has helped to support the region's emerging biomass economy and supply chain.

3.5 The Council has over 15 MW installed capacity of renewable energy technologies on its estate, Table 2. The Council generated income of £421,320 in RHI (Renewable Heat Incentive) and £77,837 in FIT (Feed-in Tariff) payments in 2014/15 as a result of these installations.

Table 2: Highland Council Installed Renewables, 1st September, 2015.

Renewable Energy Technology	Installed Capacity (kW)
Biomass	14,219
Ground Source Heat Pump	564
Solar Photo Voltaics	440
Wind	75
Air Source Heat Pump	208
Solar Thermal	25
Total	**15,531**

3.6 Notable projects completed this year to improve energy efficiency and reduce reliance on fossil fuels include the installation of biomass heating systems at Portree, Sleat and Staffin Primary Schools, and the installation of Building Management Systems and automatic metering in 75 sites across Highland. These measures will save the Council money on future energy bills, and generate income through RHI payments. By replacing expensive electric heating systems with alternatives, such as the combined heat and power system installed in Nairn Academy, there will also be a reduction in the Council's CRC payments, contributing to cost savings.

3.7 ICT provision accounts for 10% of the Council's electricity consumption. Despite a 2.5% increase in the number of managed devices installed in 2014/15, carbon emissions associated with ICT provision have remained the same as in 2013/14. This is primarily a result of streamlining more energy intensive services like servers and printing infrastructure. Work to improve the energy efficiency of the Council's ICT infrastructure through the Green ICT partnership with Fujitsu has reduced carbon emissions relating to ICT provision and use by 53% from 5,950 tCO_2e in 2010 to 2,814 tCO_2e in 2014/15. This reduction has been achieved despite an 11.6% increase in the number of managed devices installed.

4. Understanding and remediating the increase in energy consumption

4.1 Weather

A key variable that drives energy consumption across the Council estate is weather. An analysis of temperature across the Highlands for 2014/15 indicates it was not a particularly cold winter, and based on temperature alone, heating demand should not be much different in 2014/15 than 2013/14. However, rainfall in Highland over winter 2014/15 was higher than usual, Figure 5. This may mean that buildings were heated to a higher level than usual due to staff/ pupils being wet or due a perception of it being colder than it was due to the increased rainfall and overcast conditions. A significant proportion of the increased heating demand during 2014/15 may therefore be due to the weather. This may not be that unusual in the future, with a potential impact of climate change on the Highlands being wetter winters.

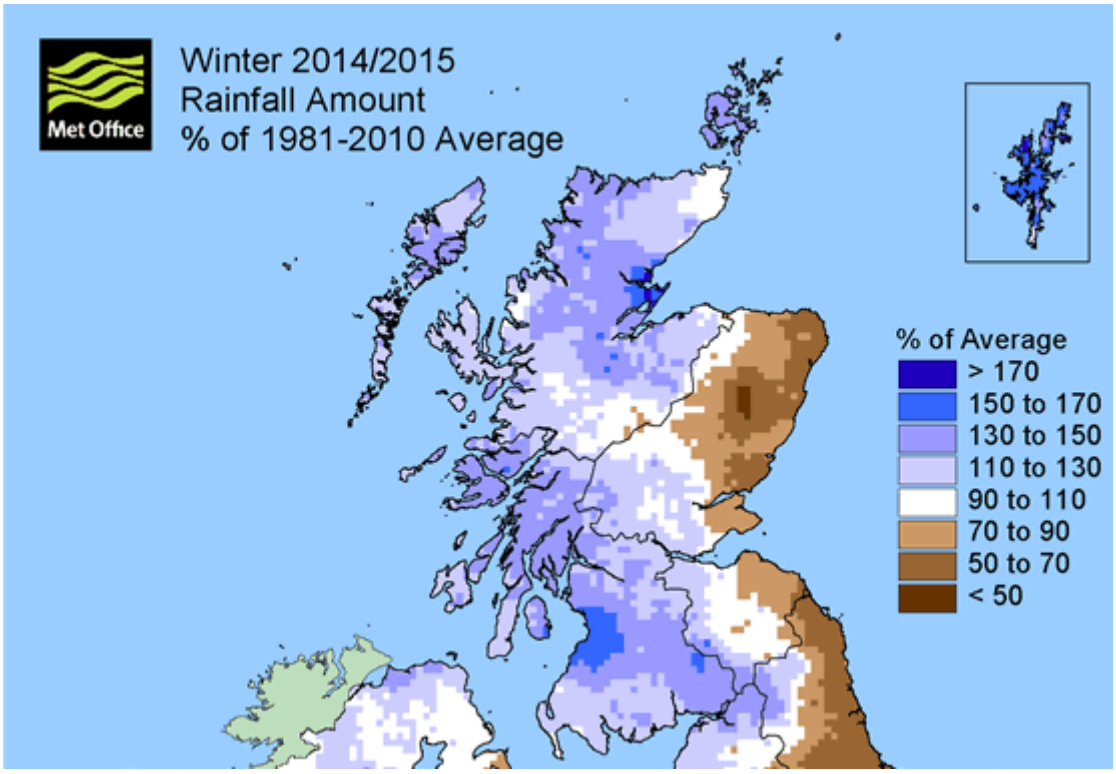

Figure 5. Rainfall map for the North of UK for Winter 2014/15 (December, January, and February).
http://www.metoffice.gov.uk/climate/uk/summaries/2015/winter

4.2 Staff behaviour

Staff behaviour can influence energy demand. It is commonly quoted that an engaged workforce can reduce energy consumption by up to 10%. In a similar manner a disengaged workforce can increase energy consumption. Whilst the Council has had a significant corporate drive to reduce costs across areas such as staff travel where budgets are devolved to teams, campaigns regarding energy use have been more sporadic. Re-engaging the workforce could help to reduce energy consumption across the Council, saving money, carbon, and result in the Council paying less CRC tax. Simple measures could be communicated through a staff engagement campaign to switch off devices when not in use, turning down thermostats where possible,

and not bringing in electric devices such as desk lighting, and electric heaters, or charging mobile phones, tablets etc.

4.3 Preliminary work on a staff engagement campaign has been undertaken by the Climate Change team, and this will be made a priority and delivered from now. This will form a key part of an action plan to reduce energy consumption.

4.4 Focus on a site by site basis

In previous versions of the Carbon Management Plan, a higher focus has been placed upon Council sites with the highest energy consumption. This will be reintroduced to refocus efforts. The top 10 energy consuming buildings account for 20.9% of the Council's total electricity, gas, and oil consumption, Appendix 3. Nine of these ten buildings are schools, with the other being Highland Council HQ. By focusing on these ten buildings over one fifth of the Council's energy consumption from oil, gas and electricity in buildings could be targeted.

4.5 Nine of the ten buildings with the greatest increase in energy consumption between 2013/14 and 2014/15 are schools, with the tenth being the Duthac House Resource centre, Appendix 4. Understanding why these increases in energy consumption have happened on a site by site basis could help to identify actions to reverse these trends. From the sites identified in Appendix 3 and 4, a key stakeholder group for reducing energy consumption is schools.

4.6 The Council also holds data on the expected energy performance of its buildings. Analysis could indicate how buildings are performing against this.

4.7 The Energy team are rolling out an energy viewer as a quick link to schools and buildings that will give them immediate access to the energy consumption and costs for each site. The portal also allows submission of meter readings and analysis of the site.

4.8 There are many potential measures that could be used to reduce energy demand and improve energy efficiency, with a range of lead times and costs. Some examples are listed in Table 3. Many of these measures are low cost, or require changes in behaviour supported by relevant internal Council policies.

Table 3. Measures to reduce energy consumption in Council buildings

	Reducing energy demand	Improving energy efficiency
Lighting	• Switching off unneeded lights	• Upgrade old fittings • Change to LED lighting
Heating	• Operate buildings closer to required temperatures • Work with staff to ensure heating is set correctly • Limit use of supplementary heaters	• Provide better heating controls • Implement limits on changes to heating systems • Move to more efficient heating types • Fit door closers

	• Ensure heaters are not blocked or covered	• Draught proofing
Power	• Limit appliances • Switch off appliances and computers when not in use	• Install water boilers • Use Combined Heat and Power where possible • Install renewables to help offset energy demand
Behaviour	• Switch off campaign • Promote use of warm clothing rather than supplementary heating	

4.9 An action plan combining these measures with the sites identified in Appendix 3 and 4 will be developed to target remedial action and reduce energy consumption in buildings.

4.10 Capital spend

As part of the Council's capital budget, a programme of investment is occurring to improve the energy efficiency of Council properties, and to replace inefficient expensive oil heating systems with renewable alternatives. In 2014/15, £2.822m was spent by the Council on energy improvement measures. Many of these projects are spend to save initiatives, saving the Council future revenue costs. This capital budget could be augmented with capital currently programmed for the Carbon CLEVER initiative.

4.11 Office rationalisation

The Council's office rationalisation programme will continue to reduce the number of properties that the Council owns, operates and heats. This will reduce energy costs to the Council.

4.12 PPP properties

As noted in paragraph 3.2, energy use in PPP properties has decreased by 4% in 2014/15, compared to 2013/14, although it is still 1% higher than the baseline year (2011/12). This situation should continue to be monitored.

5. Staff Travel

5.1 Staff travel mileage has decreased by 25% (2,573,743 miles) from 10,473,109 miles (2011/12) to 7,899,366 miles (2014/15). Business travel by staff in their own car ('grey fleet' mileage) has decreased 25% (2,193,591 miles) in 2014/15 compared to the baseline year, saving £546,998.

5.2 Staff travel by public transport and by hire car decreased by 28% in 2014/15 compared to 2011/12, with costs reduced by £189,518 (23%). This reduction is most likely a result of staff responding to the need for increased savings and adjusting their travel priorities as a result. Car hire mileage has reduced 30% (371,155 miles) saving £194,586, a 35% reduction in costs compared to 2011/12.

6. Fleet

6.1 There have been significant decreases in fuel consumption by the Council's fleet, resulting in a 27% decrease in carbon emissions compared to 2011/12. This has helped to reduce fuel spend by £897,020 compared to 2011/12. Falling fuel prices will have also contributed to the decrease in costs. Diesel use, which contributes the majority of fleet carbon emissions, has fallen 31% compared to 2011/12. This decrease has been achieved by the installation of more efficient Euro 6 standard engines, route optimisation and some withdrawal of services due to budget pressures. Gas oil consumption has increased 16% in 2014/15 compared to 2011/12 (7% increase compared to 2013/14). Gas oil is used to fuel the gritting fleet, with winter conditions driving gas oil use each year.

7. Waste

7.1 Both waste going to landfill and recycling volume from Council sites have increased in 2014/15, with an overall increase of 12% compared to 2011/12. Landfill waste arising from non-school properties has seen the largest increase, rising 40% compared to 2013/14, and 56% compared to the baseline year, with costs increasing by £117,151 compared to 2013/14.

7.2 Estimates of waste volume are conducted using industry-wide best practices, but still have the potential for significant inaccuracies due to assumptions in the methodology. The method assumes that every bin is completely full when it is emptied. It then assumes a standard factor to convert the bin volume to tonnes of waste which may also not be accurate.

7.3 Work by the Council's Waste Management team indicates that the actual density may actually be half that assumed in the calculations used here. This indicates that there are a number of sites where the number of bins provided is too high and should be reviewed to reduce costs. It also means that the carbon emissions estimates associated with waste are likely to be too high. It is not currently possible to directly calculate the tonnage of waste arising from Council activities as the Council's own waste is not segregated from general municipal collections.

7.4 The process for approving new or additional waste collection provision (that is, number of bins or number of collections per week) at schools or Council offices does not normally include an audit of existing capacity. For example if a recycling bin is added, a general waste bin is not normally taken away so overall capacity increases whilst the volume of waste generated may have stayed the same. Working with Facilities Management staff and the Waste Management Team to better assess waste provision will help to reduce the Council's spend on waste services.

8. Street lighting

8.1 Carbon emissions from street lighting have increased 2% compared to 2013/14 due to an increase in the size of the street lighting estate, with approximately 400 new street lights added due to developments in 2014/15.

8.2 LED street lights typically save 40-60% of the energy used by conventional

sodium lights. A £16 million project in the Council's capital programme is to change the majority of the Council's street lighting stock to energy efficient LEDs by 2020/21. It is estimated that by the end of the project, approximately £1 million will be saved per year in reduced energy costs at current electricity prices, approximately halving the Council's energy costs for street lighting. As mentioned in paragraph 2.7, this is the first year that carbon emissions from street lighting are now included in the calculations for the Council's payments under the CRC scheme. Reductions in energy use from street lighting will reduce future costs associated with CRC.

9. Water – all sites

9.1 Water usage decreased by 4% in 2014/15. Costs have also reduced 21% (£329,711) as a result of better account management processes, primarily through increasing the number of metered bills the Council receives. Whilst carbon emissions relating to water use only account for 1% of the Council's overall carbon emissions, the associated costs account for 6% of the activity scoped into the CMP. Reducing water consumption is therefore important for saving costs.

10. Community Emissions

10.1 The CMP includes some measures of Highland-wide carbon emissions, reported under the community emissions sector. This includes energy use in council housing, and municipal and household waste estimates. These emissions do not have reduction targets set against them, as the Council has no direct control over them.

10.2 <u>Energy use in council housing</u>
The Council is responsible for 13,488 Council houses with total carbon emissions related to energy use of 50,751 tCO_2e, 2014/15. This figure is the same as reported in 2013/14 as it is based on an estimate from the energy performance certificates of the housing stock, which have not been updated.

10.3 Whilst the Council is not directly responsible for the emissions relating to Council houses, the Council is committed to improving the energy efficiency of Council houses to help alleviate fuel poverty, with reduced carbon emissions hopefully being a co-benefit. 88% of Council housing stock now meets the energy efficiency standard of the Scottish Housing Quality Standards (SHQS). Completion of the programme is expected in January 2016.

10.4 Scottish Government has announced a new Energy Efficiency Standard for Social Housing to be reached by 2020, which supersedes the SHQS, with more stringent standards to be achieved. Council housing stock is being assessed and will be reported to the Community Services Committee in due course. Initial assessments have indicated that works may be required to 3,050 properties, at an estimated cost of £27.1m, to achieve the new standards.

10.5 The Council recently won 'project of the year' in the National Green Deal and ECO Awards 2015 for its partnership programme with energy provider E.ON,

bringing major energy savings to hard-to-treat properties in areas of high fuel poverty. The £7.4m Home Energy Efficiency Project – Area Based Scheme (HEEP-ABS) has reached around 1,111 homes in the Highlands. It has saved in excess of 63,000 tonnes of carbon, employed around 98 people and secured a £4.9m contribution in Energy Company Obligation funding from E.ON.

10.6 Municipal and Household Waste

In 2014/15, 46% of household waste was recycled. This has remained fairly constant since 2011/12, although municipal recycling has increased from 39% in 2011/12 to over 43% in 2014/15. Municipal waste going to landfill has decreased 11% compared to the 2011/12 baseline year, with overall waste volume decreasing 5% (5,751 tonnes). Despite accounting for only 56% of waste by weight, landfilled waste accounts for 95% of carbon emissions arising from waste. The recent expansion of the types of waste included in curb-side recycling in 2015/16 will help to further reduce the amount of landfilled waste.

Table 4. Municipal and household waste emissions, 2014/15. *Municipal waste includes all waste collected by the Council arising from household and business collections.*

Household waste				
Waste and treatment	**Weight**		**Carbon emissions**	
	(tonnes)	**(%)**	**(tonnes)**	**(%)**
Recycled/Composted	60,197	46.5	1,264	6.0
Landfilled	68,800	53.2	19,952	94.0
Energy from Waste	414	0.3	9	0.0
Total	**129,411**		**21,225**	
Municipal waste				
Waste and treatment	**Weight**		**Carbon emissions**	
	(tonnes)	**(%)**	**(tonnes)**	**(%)**
Recycled/Composted	62,000	43.5	1,302	5.3
Landfilled	80,125	56.2	23,236	94.6
Energy from Waste	559	0.4	12	0.0
Total	**142,684**		**24,550**	

11. Implications

11.1 Resource Implications: The CMP helps the Highland Council to monitor its practices, become more efficient, and reduce costs. Achieving the targets of the CMP requires a series of projects and actions to be delivered, many of which will have an associated cost. These projects are part of the Council's capital budget and are reviewed on a case by case basis to ensure they achieve best value for money.

11.2 There are financial risks relating to the cost of energy. Oil, gas and electricity are known to have particularly volatile prices, and the more energy the

Council consumes, the greater the risk of rising costs impacting the Council's budget, and consequently its ability to provide essential services. Total costs through the CRC scheme in 2014/15 were £832,289 and this is expected to continue to rise in the future. This will place additional pressure on Council finances to meet these obligations, particularly if energy use is not reduced.

11.3 Legal Implications: The Council has a duty to assist Scotland achieve its national carbon emission reduction targets as set out by the Climate Change (Scotland) Act 2009, to reduce emissions of greenhouse gases by at least 42% by 2020 and at least 80% by 2050. Mandatory required reporting under the revised Public Bodies Duties will be required from 2015/16.

11.4 Climate Change/ Carbon CLEVER Implications: By reducing its carbon emissions, the Highland Council is helping the region mitigate its impacts on climate change.

11.5 Risk Implications: There is a reputational risk to the Council for not achieving the targets of the CMP.

11.6 There are no Gaelic, Rural or Equalities implications arising from this report.

12. **Recommendations**

12.1 Members are asked to note:

- The Council's carbon emissions have increased 1% in 2014/15 compared to 2013/14 but have decreased by 4% compared to 2011/12 (and against a target reduction over the period is 9%);
- Compared to 2011/12, carbon emissions from energy use, staff travel, and fleet have decreased, whilst emissions from waste, water and street lighting have increased;
- Total costs decreased by 6% from £20.5m (2013/14) to £19.28m (2014/15), saving £1.22m;
- Achievements and positive changes that have occurred in 2014/15 include:
    a. Water usage decreased by 4% in 2014/15. Costs have also reduced 21% (£329,711) as a result of better account management processes, primarily through increasing the number of metered bills the Council receives;
    b. The Council avoided an even higher CRC payment by pre-paying for the majority of its offset credits in advance;
    c. The Council's investment in biomass has helped to support the region's emerging biomass economy and supply chain;
    d. The Council generated income of £421,320 in Renewable Heat Incentive and £77,837 in Feed-in Tariff payments in 2014/15;
    e. The Green ICT partnership with Fujitsu has reduced carbon emissions relating to ICT provision and use by 53% from 5,950 tCO_2e in 2010 to 2,814 tCO_2e in 2014/15;
    f. Business travel by staff has decreased 25% in 2014/15 compared to the baseline year, saving £737,048;
    g. Business travel by staff in their own car has decreased 25% in 2014/15 compared to the baseline year, saving £546,998;

h. Business travel by staff using hire cars has decreased by 30%, saving £194,586 compared to the baseline year;
i. Significant decreases in fuel consumption by the Council's fleet, reducing carbon emissions by 27% and costs by £897,020 since 2011/12;
j. 88% of Council housing stock now meets the energy efficiency standard of the Scottish Housing Quality Standards (SHQS). Completion of the programme is expected in January 2016;
k. Energy use in PPP properties has decreased by 4% in 2014/15, this is encouraging and needs on-going monitoring; and
l. The Council recently won 'project of the year' in the National Green Deal and ECO Awards 2015.

12.2 Members are asked to agree that remedial action to improve performance is refocused on areas where emissions and costs are highest and increasing. This means:

- that a programme of measures to reduce energy use is developed for use this year, targeting the sites which consume the most energy and have the highest increases in consumption, and incorporating a staff engagement campaign to reduce energy use;
- A review of the number of bins provided at Council sites to reduce costs;
- Maintaining progress which has been achieved to reduce staff travel and fleet carbon emissions.

Designation: Head of Policy and Reform
Date: 28/10/2015
Author: Gemma Cassells, Policy Officer – Climate Change
Background Data:
Energy use in buildings: Eddie Boyd, Ishbel Young
Staff travel: Chrystal Beaton, Yvonne Henderson and Lucy Lallah
Waste: Andy Hume, Michael Robb
Fleet: Crawford Gray, Susan Morrison
Street lighting: Andrew Matheson
Water: Eddie Boyd, Ishbel Young

Appendix 1: Highland Council carbon emissions, 2011/12 to 2014/15

	CO_2e emissions (tonnes)				Change in CO_2 emissions
	Baseline 2011/12	**2012/13**	**2013/14**	**2014/15**	**2011/12 – 2014/15**
Energy Use in Buildings					
Electricity	27,440	28,349	28,066	28,697	5%
Gas	4,235	5,569	4,805	5,340	26%
Oil	11,219	10,197	7,460	8,760	-16%
Total:	**42,894**	**44,115**	**40,330**	**42,797**	-0.2%
Staff Business Travel					
Business Miles	1,873	1,548	1,409	1,339	-29%
Lease Miles	294	312	328	312	6%
Training Miles	58	77	66	68	17%
Equivalent Car Hire Miles	236	176	143	137	-42%
Member Miles	148	131	131	119	-20%
Support Workers	10	9	10	4	-60%
Re-located Miles	121	91	70	75	-38%
Car Hire	385	363	493	267	-30%
Bus and Coach	3	4	10	3	0%
Ferry	1	2	1	1	0%
Plane	40	41	67	20	-50%
Taxi	0	0	0	0	0%
Train	33	29	48	36	9%
Total:	**3,200**	**2,783**	**2,776**	**2,381**	-25%
Fleet					
Petrol	79	80	79	69	-13%
Diesel	8,469	8,117	7,721	5,650	-33%
Gas Oil	886	1255	959	1,027	16%
Total:	**9,435**	**9,452**	**8,759**	**6,746**	-29%
Internal Waste*					
Landfill waste (non-schools)	395	360	416	581	47%
Mixed recycling (non-school)	2	5	5	8	300%
Landfill waste (schools)	632	691	815	814	29%
Mixed recycling (schools)	9	10	11	11	22%
Total:	**1,039**	**1,065**	**1,247**	**1,414**	36%
Street Lighting	**9,591**	**9,885**	**9,792**	**10,025**	5%
Water	**412**	**370**	**496**	**478**	16%
TOTAL	**66,552**	**67,670**	**63,401**	**63,841**	-4%

	Emissions increase

*Estimated data

Appendix 2: Costs associated with carbon emissions, 2011/12 to 2014/15

	Cost (£)				Change in cost (%)
	Baseline 2011/12	**2012/13**	**2013/14**	**2014/15**	**2011/12–2014/15**
Energy Use in Buildings					
Electricity	4,805,674	5,464,789	6,027,834	6,285,356	31%
Gas	559,027	831,775	845,305	880,250	57%
Oil	3,045,328	2,791,681	1,817,258	1,758,067	-42%
Total:	**8,410,029**	**9,088,245**	**8,690,397**	**8,923,673**	6%
Staff Business Travel					
Business Miles	2,273,554	2,258,071	2,062,180	1,949,511	-14%
Lease Miles	120,367	131,245	137,449	124,704	4%
Training Miles	39,163	51,862	44,939	45,937	17%
Equivalent Car Hire Miles	228,372	72,964	136,487	61,661	-73%
Member Miles	198,506	188,084	187,145	170,140	-14%
Support Workers	14,692	12,310	14,466	5,498	-63%
Re-located Miles	85,512	63,692	49,098	55,192	-35%
Car Hire	559,570	430,920	702,920*	363,063	-35%
Bus and Coach	3,105	4,925	10,090	1,824	-41%
Ferry	3,610	3,170	5012	3243.22	-10%
Plane	44,168	40,644	81,931	30,564	-31%
Taxi	164	462	110	314	92%
Train	55,317	59,801	151,606	77,407	40%
Total:	**3,626,106**	**3,829,745**	**3,583,434**	**2,889,058**	-20%
Fleet					
Petrol	39,134	39,953	38,789	38,842	-1%
Diesel	3,664,896	3,542,508	3,302,019	2,734,456	-25%
Gas Oil	207,936	288,929	212,259	187,046	-10%
Total:	**3,911,966**	**3,871,390**	**3,553,067**	**2,960,345**	-24%
Internal Waste (collection and disposal costs, not including landfill tax)					
Landfill waste (non-schools)	170,520	173,027	230,042	347,193	104%
Mixed recycling (non-school)	24,462	44,185	56,818	91,431	274%
Landfill waste (schools)	370,716	381,160	458,362	511,239	38%
Mixed recycling (schools)	113,824	109,036	128,972	136,542	20%
Total:	**679,521**	**707,407**	**874,194**	**1,086,406**	60%
Street Lighting	**1,794,867**	**2,316,706**	**2,270,227**	**2,216,616**	23%
Water	**1,667,973**	**1,662,253**	**1,533,631**	**1,203,921**	-28%
TOTAL	**20,087,459**	**20,924,151**	**20,504,950**	**19,280,019**	-4%
CRC tax	**479,441**	**453,450**	**424,560**	**832,289**	73%

	Cost increase

***data currently under review**

Appendix 3: Highest energy consuming buildings, 2014/15.

	Building[1]	Total consumption (kWh)	% Total Highland Council*
1.	Alness Academy	3,311,478	2.78
2.	Wick High School	2,847,691	2.39
3.	Highland Council Headquarters	2,827,688	2.37
4.	Nairn Academy	2,764,697	2.32
5.	Inverness Royal Academy[2]	2,555,458	2.14
6.	Tain Royal Academy	2,334,743	1.96
7.	Inverness High School	2,275,579	1.91
8.	Charleston Academy	2,113,813	1.77
9.	Grantown Grammar School	2,049,512	1.72
10.	Culloden Academy	1,761,630	1.48
	Total	**24,842,289**	**20.9**

[1]List excludes PPP properties
[2]Inverness Royal Academy is currently being rebuilt
*Total electricity, oil, and gas consumption in 2014/15 was 119,213,703 kWh.

Appendix 4: Largest increases in energy consumption (kWh) 2013/14 - 2014/15

	Building[1]	Total Energy Consumption 2013/14	Total Energy Consumption 2014/15	Increase
		(kWh)		
1.	Tain Royal Academy	1,507,776	2,334,743	826,967
2.	Plockton High School	624,071	1,276,839	652,768
3.	Nairn Academy	2,157,384	2,764,697	607,313
4.	Inverness High School	1,998,695	2,275,579	276,883
5.	Grantown Grammar School	1,800,124	2,049,512	249,388
6.	Crown Primary School	547,926	759,618	211,693
7.	Charleston Academy	1,906,584	2,113,813	207,228
8.	Thurso High School	1,526,380	1,718,244	191,863
9.	Duthac House Resource Centre (Former)	165,227	344,913	179,686
10.	Wick High School	2,668,737	2,847,691	178,954
	Total	**14,902,904**	**18,485,649**	**3,582,743**

[1]List excludes PPP properties