The Highland	Council
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#### Finance, Housing and Resources Committee 9 October 2013

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## Annual Progress Report on the Carbon Management Plan 2012/13

## Report by the Assistant Chief Executive

This report reviews performance of the Carbon Management Plan to the end of March 2013. Since the baseline year of 2007/08, carbon emissions have reduced by 10% or 6,405 tonnes  $CO_2$ . Although a sizeable reduction, this is less than the 15% target (3% p.a.). Carbon emissions from all sectors have decreased since 2007/8, with the exception of street lighting where emissions show an increase, partly because the network continues to expand, and partly because the method of calculating emissions changed in 2011/12.

While carbon emissions have reduced, total costs have increased by 11% from  $\pounds$ 18,259,590 to  $\pounds$ 20,221,378 between 2007/08 and 2012/13 due to rising energy and fuel prices. By taking action we have avoided costs of  $\pounds$ 2.3m in 2012/13 (costs the Council would have incurred had consumption not decreased). Total costs through the Carbon Reduction Commitment Energy Efficiency scheme (carbon tax) additionally amounted to  $\pounds$ 453,540 in 2012/13.

In 2012/13 the Council's carbon emissions have increased by 3%. This is the only year that emissions have increased since 2007/8 and is largely due to a cold and long winter resulting in an increased heating demand and an extended period of winter road maintenance. Without on-going carbon emission reduction measures, the Council's carbon emissions would have been significantly higher.

### 1. Background

1.1 Highland Council is a signatory of Scotland's Climate Change Declaration and has committed to tackle 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. The Highland Council Programme 2012-17 states that:

"The Council will continue to reduce carbon emissions from Council operations, with their associated costs, to achieve the Scottish Government's target of 42% reduction in emissions by 2020. We will publish a carbon management plan by 2013".

1.2 The Council's progress to reduce its carbon emissions is monitored through its Carbon Management Plan (CMP). This sets out a strategy for emissions reductions and associated cost savings from those carbon emitting activities that Highland Council can monitor and influence. This paper reports on the Council's carbon emissions for 2012/13, and summarises progress over the past five years.

1.3 For 2012/13 our carbon emissions are reported against the scope of the former Carbon Management Plan 2009-12, with targets for emissions reductions extended into 2012/13. The reduction in emissions over this extended plan period of 2007/8 to 2012/13 is summarised below.

Sector	Target	Baseline emissions (2007/8)	Emissions Saving Target	Actual Emissions Savings achieved	Change in Emissions 2007/8 – 2012/13
	(%)		Tonnes CO <sub>2</sub>		(%)
Energy use in Buildings	-15	44,094	-6,614	-4,489	-10
Staff Travel	-15	3,813	-572	-704	-18
Fleet*	-6.25	10,595	-662	-1,366	-13
Internal Waste	-25	1,391	-348	-566	-41
Street Lighting	-7.5	7,065	-530	+720	+10
Water (Top 100)	-12.5	141	-18	-3	-2
Total	-15	67,099	10,065	-6,408	-10

Table 1: Carbon emissions (CO<sub>2</sub>) reduction targets by Sector 2007/08-2012/13. \*Fleet baseline 2008/09

- 1.4 The Council's total carbon emissions for 2011/12 were revised in 2013 from 58,128 to 58,844 tonnes CO<sub>2</sub>. This was due to an under reporting of business travel mileage in last year's annual report. Extra checks and scrutiny have now been put in place by the Finance Service to ensure improved data management. The 13% decrease in carbon emissions since 2007/08 reported last year, should have instead been 12%.
- In a meeting of the Finance, Housing, and Resources Committee on April 10<sup>th</sup> 2013, the revised Carbon Management Plan for 2013-2020 was agreed. All future reporting will be against the revised scope included in this new plan.

### 2. Summary

2.1 In 2012/13, Highland Council's total CO<sub>2</sub> emissions from all six sectors of emissions amounted to 60,691 tonnes, a reduction of 6,408 tonnes (10%) since the baseline year of 2007/08, as set out in Appendix 1 and Figure 1 below. Progress was slower than expected in 2009/10, 2010/11 and especially in 2012/13 due to increased heating demand from significantly colder winters.



Figure 1: Council carbon emissions, 2007/08 – 2012/13.

- 2.2 Total costs associated with the six sectors of emissions scoped into the CMP are outlined in Appendix 2. Despite a decrease in consumption in almost all sectors between 2007/8 and 2012/13, costs have risen in all sectors with the exception of Internal Waste and Water (Top 100 sites). These increases in costs are largely due a rise in the price of fuel and electricity.
- 2.3 Costs avoided refers to the sum the Council would have to had paid in 2012/13 if consumption had stayed at the 2007/08 level based on current prices. In 2012/13 total costs across all six sectors of emissions was £20,221,378. Without the efforts to decrease energy and fuel use through implementing the CMP, costs would have been 11% higher, £22,529,970, in 2012/13.
- 2.4 This cost avoidance should be viewed with the caveat that in some areas consumption has been reduced by using alternate services. For example, in 2012/13 £526,446 was spent on biomass, and £126,173 on recycling for the properties within the scope of CMP 2009-12.
- 2.5 In August, the Council achieved re-accreditation for the Carbon Trust Standard which it has held since 2009. This award publically recognises the Council's continued progress in reducing carbon emissions as well its commitment to making future reductions. The accreditation process entailed:
  - Scrutiny of the Council's carbon emissions data;
  - Calculation of the carbon emissions reductions over a four year period;
  - Site visits this year conducted in Fort William; and
  - A written report covering Governance, Accounting, and Carbon Management.

The Council will hold the Carbon Trust Standard until April 2015.

### 3. Energy Use in buildings

3.1 Winter 2012/13 was particularly cold across the UK, with low temperatures stretching into spring. The average UK temperature in March was 2.2°C, 3.3°C

below the long term average 1981-2010, and ranks as the joint second coldest March on record. This has resulted in a higher heating demand than would otherwise be expected and carbon emissions due to energy use in buildings have increased by 7% from the previous year, see Appendix 1 and Figure 2.



Figure 2: Carbon emissions by energy type, 2007/8-2012/13.

- 3.2 In 2012/13, gas consumption increased by 30% whilst oil consumption only increased by 2%. Gas heating is considered as relatively low carbon, whilst oil heating is considered carbon intensive, and the price of oil is known to fluctuate. There has therefore been targeted replacement of oil heating systems with biomass boilers. These systems are almost carbon neutral and have a much lower cost (per unit of energy).
- 3.3 Carbon emissions due to energy use in buildings are the largest sector reported under the CMP, 66% in 2007/08. Progress in this sector is therefore fundamental to ensure the overall targets of the CMP are achieved. Over the baseline year of 2007/08, emissions due to energy use in buildings have decreased by 10% (4,489 tonnes CO<sub>2</sub>), less than the target of 15% (6,614 tonnes CO<sub>2</sub>).
- 3.4 Progress to reduce emissions has been achieved through a variety of measures including:
  - Renewable energy installations e.g. biomass boilers;
  - Awareness raising and behaviour changes;
  - Improved monitoring and scrutiny of energy use;
  - Asset rationalisation;
  - Energy efficiency actions e.g. more efficient ICT estate;
  - Improved insulation and heating controls;
  - Lighting upgrades; and
  - The on-going Sustainable Schools project.

3.5 Whilst emissions have reduced by 10% since 2007/8, costs have increased by 11% due to continuing increases in the price of energy, Figure 3. Had consumption remained at 2007/08 levels, the energy bill for 2012/13 would have been £10,208,828 instead of the actual cost of £9,088,335; a cost avoidance of £1,120,493. However, it should be noted that the Council has replaced many oil heating systems with biomass boilers and the cost of this biomass in 2012/13 was £526,446.



Figure 3: Total cost by energy type, 2007/8- 2012/13.

- 3.6 The Carbon Reduction Commitment Energy Efficiency Scheme (known as CRC) is a mandatory emissions reduction scheme aimed at large public and private organisations. It requires the Council to pay a tax, currently £12 per tonne of CO<sub>2</sub>. Now in the third year of the scheme the Council are required to provide information on emissions from energy use in buildings and submit an annual return to allow the purchase of allowances for the emissions incurred.
- 3.7 The CRC submission for 2012-13 includes a number of changes to the scheme where the inclusions of the types of fuels and supply metering profiles have changed. Propane, oil and LPG supplies are excluded from the reporting, along with domestic type electricity supplies. Further revision is to take place for the next reporting phase and this is intended to reduce the complexity of the scheme.
- 3.8 The scope of emissions reported under the CRC scheme is a little different to that of the CMP 2009-12. The revised scope of the CMP 2013-20 was aligned to that of the CRC scheme. Under the scope of CRC reporting, carbon emissions for the Council for the period 2012-13 were 37,795 tonnes of CO<sub>2</sub>, at an allowance cost of £453,540.

### 4. Staff Travel

4.1 Business mileage for 2011/12 was under reported in last year's annual report and has subsequently been revised. In 2012/13, 1,186,484 fewer miles were travelled by staff in their own vehicles (grey fleet) than in 2011/12, equating to an 11% decrease in carbon emissions (388 tonnes  $CO_2$ ). This reduction in miles has led to a decrease in costs of £141,812 over the past year.

- 4.2 Since the baseline year, staff travel carbon emissions have decreased by 704 tonnes (18%), exceeding the target set by the CMP of 572 tonnes (15%). Staff and Members are now travelling 2,153,589 less miles than they did in 2007/08. Despite consumption decreasing, the associated costs have increased by £35,060, largely due to changes in the mileage rate that could be claimed from April 2010. Had staff business travel remained at 2007/8 mileages, the Council would have incurred an additional £559,961 in costs in 2012/13.
- 4.3 Savings have been achieved through:
  - The implementation of a Business Travel Hierarchy asking staff to consider alternatives to using their own car for business travel;
  - Increased management scrutiny of staff travel;
  - Promoting car sharing and other behaviour change projects;
  - Development and roll out of video-conferencing equipment, Office Communicator, and BT Meet ME reducing the need to travel;
  - Cycling (20p/mile) and car sharing (5p/passenger/mile)for the purposes of business travel are incentivised;
  - The purchase of two range extended electric vehicles.

#### 5. Fleet

- 5.1 Over the past year, fleet carbon emissions have decreased by 0.1%: diesel consumption has decreased by 4%, whilst the consumption of gas oil has increased by 42%. Gas oil is used to fuel gritting vehicles, and this increase in consumption is due to an extended period of winter road maintenance that was required in 2012/13.
- 5.2 The baseline for fleet carbon emissions was reset at 2008/09. In 2012/13 fleet emissions were 9,229 tonnes CO<sub>2</sub>, a 13% decrease over the baseline year exceeding the 6.25% target. Reductions have been achieved through a number of measures, including:
  - Fleet vehicle rationalisation;
  - Installing speed limiters in light vehicles;
  - Fuel efficient driver training;
  - The purchase of two electric vans; and
  - Re-routing waste collection vehicles.
- 5.3 Whilst emissions have reduced by 13% since 2008/09, costs have increased by 9% (£311,233), due to the increased cost of fuel. Had consumption remained at 2008/09 levels the total fuel bill for 2012/13 would have been £4,499,528, representing a cost avoided of £628,138.

#### 6. Internal Waste

6.1 Over the baseline year, CO<sub>2</sub> emissions from internal waste sent to landfill have decreased by 41%, exceeding the target of 25%. This is due to a transition to alternate weekly collections, the introduction of recycling facilities, and waste minimisation and recycling policies. Over the past year, carbon

emissions from internal waste have decreased by 35%. Schools in Highland are actively engaged with the Eco-schools scheme, with all schools having gained a Bronze eco-award, and 37% of Highland schools having obtained the highest award of Green Flag status.

- 6.2 In 2011/12 CMP data showed that waste and energy use in Highland schools needed to reduce in line with other sectors of the plan. As a result, the School Global Footprint project was devised. 30 staff from four Council Services were trained in the Global Footprint tool and schools were invited to engage in the project. 37 schools are currently working on the project, raising awareness of the carbon emitted from generating waste and energy consumption.
- 6.3 The data for internal waste comes with some qualifications. It is calculated based on the number of bins collected at each site and assumes that bins are full at the time of collection. In addition, under the scope of CMP 2009-12 it does not capture recycling. This is included in the revised scope of CMP 2013-2020.
- 6.4 The cost of collecting internal waste in 2012/13 was £13,798 less than in 2007/08. It should be noted that this does not include the cost of recycling collections which totalled £126,173 in 2012/13 across the top 40 sites, primary, and secondary schools.

#### 7. Street Lighting

- 7.1 Carbon emissions from energy use in street lighting have increased by 3% in 2012/13 from the previous year due to continued growth in the street lighting network as a result of new developments. The number of lighting columns in Highland in 2012/13 was 49,917, an increase from 49,813 in 2011/12, and 47,321 in 2007/08.
- 7.2 Since the baseline year, emissions from street lighting have increased by 10%; although part of this increase has arisen from a new method of calculating emissions. Street lighting is on an unmetered supply and charged per lantern. In 2011/12, the UK overseeing body (UMSUG) which reviews the nationally agreed burning hours increased the figures for the North of Scotland from 3912 to 4130 hours per lantern p.a. Although the lights are operated in exactly the same way, this has led to an increase in reported consumption.
- 7.3 Street lighting energy consumption will be incorporated into the CRC scheme in 2014/15. There will therefore be a charge per tonne of carbon emissions associated with street lighting. Due to the necessity to accurately measure and produce figures for the CRC introduction, which are subject to external scrutiny and verification by the Scottish Environment Protection Agency, a meter reading consultant has been employed (Power Data Associates). This data will be incorporated into the revised CMP.
- 7.4 The conversion factor that will be used to calculate carbon emissions from street lighting has not yet been announced. The revised Department for Environment, Food and Rural Affairs conversion factor (2012), which is utilised in the CMP 2013-2020, is 0.52037, significantly higher than that currently

used, 0.43. Based on this revised conversion factor and consumption in 2012/13 this would equate to 9,421 tonnes  $CO_2$ . At an expected cost of £16 per tonne, this would equate to a cost to the Council of £150,736 p.a.

## 8. Water Consumption – Top 100 sites

8.1 Water consumption in the top 100 sites has declined by 2% since 2007/08. The top 100 list is dynamic, allowing for premises to move onto, and off of the list as consumption changes. In 2007/08, only 100 sites had water meters installed. All sites now have water meters installed and thus the top 100 list has changed significantly, making comparisons difficult. The revised scope of the Carbon Management Plan 2013-20 will monitor water consumption at all sites, allowing for improved monitoring.

## 9. Next Steps

- 9.1 The Carbon Management Plan 2013-20 was agreed at a meeting of the Finance, Housing and Resources committee in April 2013. All future reporting will be against the scope and targets agreed in the revised CMP.
- 9.2 At a meeting of the Highland Council in June 2013, the Council committed to the initiative of a Carbon Neutral Inverness in a Low Carbon Highlands by 2025, branded as Carbon CLEVER Highlands. This initiative is currently being developed with involvement from all Services, and will be formally launched at the Carbon CLEVER Highlands Conference in November. The CMP will be aligned to the Carbon CLEVER Highlands initiative once targets for that are agreed.
- 9.3 In Summer 2013, the first quarterly <u>Carbon CLEVER newsletter</u> was published to help keep Elected Members and staff abreast of climate change related matters at the Council. Members training on the Carbon Management Plan will be taking place on Friday 6<sup>th</sup> December, 10:30-12:30.

### **10.** Financial Implications

- 10.1 The total revenue cost of the activities scoped into the CMP in 2012/13 was £20,221,378, with total costs avoided in 2012/13 over the baseline year of £2,308,592. Emissions from energy use in buildings are subject to the CRC energy efficiency scheme at a cost of £12 per tonne. In 2012/13 this cost the Council £453,540. From 2014/15 street lighting emissions will be included in, and will add to the cost of, CRC.
- 10.2 Budget implications where savings in particular locations or energy budgets have been identified, these have been realised as part of the budget process, and utilised to offset cost pressures from overall increases in energy costs.

### 11. Equalities Implications

11.1 An equality impact screening was conducted for the revised Carbon Management Plan 2013-20. No issues arose and a full Equality Impact Assessment is not required.

### 12. Climate Change Implications

12.1 Reduced carbon emissions will help to mitigate the cause of climate change

and meet the legislative requirement of the Climate Change (Scotland) Act 2009.

### 13. Risks

- 13.1 Without an adequate CMP in place, the costs associated with increased energy consumption and associated carbon emissions will rise. The price of electricity and fuels continues to rise, landfill taxes increase each year, and the cost and scope of the CRC energy efficiency scheme, is expected to increase.
- 13.2 Presenting accurate and verified data is crucial for the validity of the CMP and for the Carbon CLEVER Highlands initiative going forward. The quality of the data management process is continually improving. Scrutiny, such as through the internal audit into the CRC scheme in 2013, has assisted in highlighting and subsequent implementation of improved data management techniques. The staff business transport carbon emissions for 2011/12 were revised in 2013 and following this, extra checks and scrutiny put in place by the Finance Service. New arrangements are in place to ensure accuracy in calculating emissions from street lighting.

#### 14. Recommendation

- 14.1 Members are asked to NOTE:
  - 1. The progress in reducing carbon emissions by 10% from 2007/08 2012/13;
  - 2. That in 2012/13 emissions reduced from the year before from our business travel, internal waste, and top water consuming properties, but that there was little change in emissions from fleet and increases in emissions from street lighting and from energy use in our buildings. Overall emissions increased by 3% in 2012/13. This is largely attributed to a long and cold winter which resulted in an increased heating demand and period of winter maintenance;
  - All future reporting will be done against the scope of the revised Carbon Management Plan 2013-20 which was agreed at a meeting of this Committee in April 2013;
  - 4. Progress for 2012/13 will also be reported back to the Scottish Government in spring 2014 as part of our commitment towards Scotland's Climate Change Declaration; and
  - 5. In June 2013, the Council committed to achieving a carbon neutral Inverness in a low carbon Highlands by 2025; Carbon Clever Highlands. The Carbon Management Plan will contribute to this vision by continuing to identify, measure, monitor, and reduce carbon emissions across a wide range of Council activities.

Date: 30/08/2013 Author: Stephen Carr, Policy Officer – Climate Change

Background Papers: Data supplied by the following officers: Energy: Eddie Boyd, Principal Engineer, Housing and Property Service. Staff Travel: Marie Eadie, Senior Payroll Officer, Finance; Jackie McNeish, Senior Accountant Technician, Finance; Val McEwan, NHS Highland. Fleet: Willie MacPherson, Fleet and Maintenance Manager, TECs. Waste: Andy Hume: Waste Management Officer (Strategy), TECs. Street Lighting: Andrew Matheson, Street Lighting Manager, TECs. Water: Eddie Boyd, Principal Engineer, Housing and Property Service.

	CO <sub>2</sub> emissions (tonnes)			Change in CO <sub>2</sub> emissions		
	Baseline 2007-08	2011-12	2012-13	2011/12 – 2012/13	2007/08 – 2012/13	Target by 2012 (2013)
Target 1: Energy Use in B	uildings					
Electricity	23,156	21,722	22,772	+5%	-2%	
Gas	4,110	3,836	4,990	+30%	+21%	
Oil	16,828	11,569	11,844	+2%	-30%	
Total:	44,094	37,127	39,605	+7%	-10%	-12% (-15%)
Target 2: Staff Business T	ravel		•	-		
Business Miles	1,406	1,956	1,616	-17%	+15%	
Lease Miles	433	307	326	+6%	-25%	
Training Miles	196	60	80	+33%	-59%	
Equivalent Car Hire Miles	459	247	184	-26%	-60%	
Member Miles	200	155	137	-12%	-32%	
Homes Carers	909	635	661	+4%	-27%	
Support Workers	190	11	9	-18%	-95%	
Re-located Miles	20	126	95	-25%	+375%	
Total:	3,813	3,497	3,109	-11%	-18%	-12% (-15%)
Target 3: Fleet *Baseline	of 2008/09					
Petrol	126	79	80	+1%	-37%	
Diesel	9,436	8,350	8,002	-4%	-15 <b>%</b>	
Gas Oil	1,028	810	1,147	+42%	+12%	
LPG	5	0	0		-100%	
Total:	10,595	9,239	9,229	0%	-13%	-5% (-6.25%)
Target 4: Internal Waste			-	-	•	-
Internal Waste Top 40	336	194	133	-31%	-60%	
Waste from Primary	540	582	374	-36%	-31%	
Waste from Secondary	515	486	317	-35%	-38%	
Total:	1,391	1,262	825	-35%	-41%	-20% (-25%)
Target 5: Street Lighting	7,065	7,556**	7,785	+3%	+10%	-6% (-7.5%)
Target 6: Water Top 100	141	163	138	-15%	-2%	-10% (-12.5%)
TOTAL	67,099	58,844	60,691	+3%	-10%	-12% (-15%)

# Appendix 1: Highland Council carbon emissions 2007/08 to 2012/13

\*\*New method of calculating emissions was introduced.

Emissions increase

	Cost (£)			Change in cost (%)			
	Baseline 2007-08	2011-12	2012-13	2011/12  2012/13	2007/08  2012/13	Costs Avoided** in 2012/13 over 2007/08	
Target 1: Energy Use in Bui	ldings				•	•	
Electricity	5,278,136	4,805,674	5,464,879	+14%	+4%		
Gas	390,935	559,027	831,775	+49%	+113%		
Oil	2,542,105	3,045,328	2,791,681	-8%	+10%		
Total:	8,211,176	8,410,029	9,088,335	+8%	+11%	£1,120,493	
Target 2: Staff Business Tra	avel (Grey flee	et – Staff and	Members usi	ng own car	s)		
Business Miles	1,591,210	2,273,554	2,258,071	-1%	+42%		
Lease Miles	145,512	120,368	131,245	+9%	-10%		
Training Miles	127,026	39,164	51,862	+32%	-59%		
Equivalent Car Hire Miles	154,301	228,372	72,964	-68%	-53%		
Member Miles	279,050	198,506	188,084	-5%	-33%		
Homes Carers	1,110,707	869,576	909,705	+5%	-18%		
Support Workers	231,815	14,692	12,310	-16%	-95%		
Re-located Miles	13,251	85,513	63,692	-26%	+381%		
Total:	3,652,873	3,829,745	3,687,933	<b>-4</b> %	+1%	£559,961	
Target 3: Fleet *Baseline of	2008/09						
Petrol	49,940*	39,134	39,953	+2%	-20%		
Diesel	3,328,887*	3,664,896	3,542,508	-3%	+6%		
Gas Oil	181,330*	207,936	288,929	+39%	+59%		
LPG	1,553*	0	0		-100%		
Total:	3,560,157*	3,911,966	3,871,390	<b>-1</b> %	<b>+9</b> %	£628,138	
Target 4: Internal Waste <sup>+</sup>							
Internal Waste Top 40	108,111	92,313	62,854	-32%	-42%		
Waste from Primary	173,309	270,901	202,261	-25%	+17%		
Waste from Secondary	165,152	221,136	167,659	-24%	+2%	]	
Total:	446,572	584,350	432,774	-34%	-3%	]	
Target 5: Street Lighting	1,400,000	1,708,258	2,190,730	+28%	+56%		
Target 6: Water Top 100	987,259	1,071,497	950,216	-11%	<b>-4</b> %		
TOTAL	18,259,590	19,515,845	20,221,378	+4%	+11%	£2,308,592	

## Appendix 2: Costs associated with carbon emissions 2007/08 – 2012/13

\*\*Costs avoided can be calculated when consumption has reduced but costs have increased. \*Costs include landfill tax -  $\pounds$ 64/tonne in 2012/13, increasing by  $\pounds$ 8/tonne/year.

Cost increase