MAIDSTONE
Borough Council

REPORTS FOR DECISION BY THE CABINET MEMBER FOR ENVIRONMENT

Date Issued: **7 January 2010**

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MAIDSTONE BOROUGH COUNCIL

CABINET MEMBER FOR ENVIRONMENT

REPORT OF THE DIRECTOR OF PROSPERITY AND REGENERATION

Report prepared by Jennifer Hunt
Date issued: 7 January 2010

1. QUARTER 1 & 2 CARBON REPORT 2009/10

1.1 Issue for Decision

1.1.1 To note the Council's carbon footprint for the first two quarter's of 2009/10, and its progress towards the carbon reduction targets adopted in November 2008, and to consider actions to further reduce carbon emissions.

1.2 Recommendation of the Director of Prosperity and Regeneration

1.2.1 That the Cabinet Member notes the reported half-yearly results and asks the Chief Housing Officer to produce for consideration a costed Carbon Reduction Action Plan in-line with the Energy Saving Trust Local Authority One-to-One Programme, to be reported back to the Cabinet Member by 31 March 2010.

1.2.2 That the Cabinet Member asks the Chief Housing Officer to identify and report back to the Cabinet Member three buildings that would benefit most from grants for the installation of microgeneration technologies and energy efficiency measures to tackle rising costs and to reduce the impact of these buildings on the council's carbon footprint.

1.2.3 That the Cabinet Member agrees the Climate Change Officers' Working Group is resumed to promote the recommendations of this report and provide continued cohesion between all departments dealing with climate change issues.

1.3 Reasons for Recommendation

BACKGROUND

1.3.1 This report presents the Council's carbon footprint for the first and second quarters of 2009/10 and details the action's currently being undertaken by the Council to reduce its carbon footprint and to achieve the target of an annual 3% reduction in carbon emissions.

1.3.2 Since the decision made on the 12th November 2008 and the requirement to report progress on the annual targets to Cabinet on a half year basis, this is the first mid-year Carbon Footprint Report to be produced.

1.3.3 In August 2009 the Council's Carbon Footprint for 2008/09 was presented to Cabinet, which indicated that the CO_2 emissions from the Council's operations had increased by 3.48% from the previous year but that a 10.16% decrease since the baseline year of 2006/07 had occurred.

THE COUNCIL'S CARBON FOOTPRINT

1.3.4 The following carbon footprint data has been calculated using the NI 185 spreadsheet toolkit (provided by DEFRA) and has been calculated in-line with the National Indicator 185 methodology.

1.3.5 The NI 185 spreadsheet toolkit is set up to calculate the carbon footprint based on a year's worth of data and therefore some changes were required to enable an accurate figure for the carbon footprint over a period of 6 months, to be determined.

1.3.6 In summary, the CO_2 emissions from stationary sources (buildings or sites) are corrected according to the weather experienced during the period the data relates to, known as the number of 'degree days'. As the calculation of the carbon footprint was over a period of 6 months, using this year standard was not appropriate. Therefore a more appropriate value was determined (an average for the six months of concern) and was used in place of the year standard in the spreadsheet. For a more detailed description of this change please see Appendix A.

1.3.7 As this report constitutes the first mid-year Carbon Footprint report to be produced, the carbon footprint for the first and second quarters of 2008/2009 has been determined to provide a basis for comparison.

1.3.8 Table 1: Carbon Emissions (tonnes)

	Half Yearly Emissions		**Comparison**	
CO2 Emissions (tonnes)	**2008/09**	**2009/10**	**Change**	**% Change**
Buildings				
Examples:				
Mote Park Leisure Centre Gas	*423.01*	*436.39*	*13.38*	*3.16%*
Mote Park Leisure Centre Electricity	*81.31*	*136.58*	*55.28*	*67.99%*
Hazlitt Theatre Gas	*39.49*	*35.99*	*-3.50*	*-8.87%*

Hazlitt Theatre Electricity	*62.94*	*53.11*	*-9.83*	*-15.62%*
Maidstone Museum Gas	*12.60*	*18.57*	*5.96*	*47.29%*
Maidstone Museum Electricity	*39.58*	*59.32*	*19.74*	*49.87%*
Public Conveniences Electricity	*42.92*	*26.01*	*-16.91*	*-39.39%*
Main Offices Gas	*58.39*	*9.29*	*-49.10*	*-84.10%*
Main Offices Electricity	*282.58*	*282.37*	*-0.20*	*-0.07%*
Total Emissions from electricity use	*987.99*	*1,051.74*	*63.74*	6.45%
Total Emissions from fossil fuel consumption	*633.56*	*600.19*	-33.38	-5.27%
Total Emissions from buildings	**1,621.56**	**1,651.92**	**30.36**	**1.87%**

Vehicles				
Examples:				
Waste Collection Service	*558.52*	*465.41*	*-93.12*	*-16.67%*
Maidstone Borough Services	*265.60*	*252.32*	*-13.28*	*-5.00%*
Pool Cars	*2.01*	*2.21*	*0.20*	*10.04%*
Casual, Essential and Lease Car users	*26.86*	*35.83*	*8.96*	*33.37%*
Total Emissions from service vehicle fleet	*1,017.03*	*915.58*	-101.45	-9.97%
Total Emissions from business travel	*30.41*	*38.94*	8.53	28.05%
Total Emissions from vehicles	**1,047.44**	**954.52**	**-92.91**	**-8.87%**

Total Emissions	**2,668.99**	**2,606.44**	**-62.55**	**-2.34%**

1.3.9 Table 1 above shows the carbon footprint for the first half of 2009/10 and compares it with the equivalent time period for 2008/09. The carbon footprint is expressed in terms of emissions (in tonnes) of carbon dioxide. The sources of CO_2 are divided between buildings and vehicles, and a number of examples are extracted for information.

1.3.10 The Council's carbon footprint in the first half of 2009/10 was 2606 tonnes of CO_2. During this period 63% of emissions came from buildings and 37% of the emissions were from vehicles. This compares to a carbon footprint of 2669 tonnes of CO_2 in the first half of 2008/09. The carbon footprint was 2.34% lower in the first half of 2009/10 than in the equivalent period in 2008/09.

BUILDINGS

1.3.11 Just considering emissions from buildings, 64% of the emissions were due to electricity usage and 36% of the emissions were due to fossil fuel usage. The Council's offices at Maidstone House accounted for

21% of the emissions from buildings and 14% of the total emissions for this period.

1.3.12 The buildings that emitted the largest amount of CO_2 are shown in Table 2.

Table 2: Top CO_2 Emitters (buildings) first half of 2009/10

Building or Site	CO_2 emissions (tonnes) 2009/10
Mote Park Leisure Centre (Gas)	436.39
MBC Offices (Maidstone House) (Elec)	282.37
Mote Park Leisure Centre (Elec - CHP)	184.48
Mote Park Leisure Centre (Elec - Grid)	136.58
Vinter Park Crematorium (Gas)	59.81
Maidstone Museum (Elec)	59.32
King Street Car Park (Elec)	57.81

1.3.17 The total CO_2 emissions from buildings increased by 1.87% from the same period in 2008/09. Emissions from electricity use increased by 6.45% and emissions from fossil fuel consumption decreased by 5.27% compared to the same period in 2008/09.

1.3.18 Analysis shows that at Cobtree Golf Course Club house emissions for the first half of 2009/10 fell by 16% from electricity use and at King Street car park emissions fell by 17% from electricity use compared to the same period in 2008/09. At the Hazlitt Theatre a 16% reduction in emission from electricity use and a 9% reduction in emission from gas use were identified.

1.3.19 At the Maidstone Museum however, emissions from gas use have increased by 47% compared to the first half of 2008/09 and emissions from electricity use have also increased by 50%. The electricity usage at the Museum has increased due to an incorrect bill that is currently in dispute.

1.3.20 At Mote Park Leisure Centre, the electricity usage has increased by 68% compared to the same period in 2008/09. This increase in usage occurred as the combined heat and power (CHP) unit at the Leisure Centre broke down a number of times, and when this occurred, the electricity deficit was made up from grid electricity. However the CHP usage remained very similar to the amount used for the corresponding period in 2008/09. This is thought to be due to the repair and / or replacement of air handling units and an inefficient building management system.

1.3.21 Finally, considering the main Maidstone House offices only, the total carbon emissions from gas use in the first half of 2008/09 was 23.39 tonnes and this fell to 9.29 tonnes of CO_2 for the same period in 2009/10, resulting in a 60% decrease in emissions from gas use in these offices. It should be borne in mind that Maidstone House was not occupied for 2 months of 2008/09 (April and May).

1.3.22 In the Maidstone House offices, the total carbon emissions from electricity use for the whole of 2008/09 were 498.36 tonnes. At the half way point in 2009/10, 282.37 tonnes of CO_2 had been emitted through electricity use at these offices, equating to 56% of the total for 2008/09. Again consideration should be given to the fact that Maidstone House was not occupied for 2 months of 2008/09 (April and May).

1.3.23 The Carbon Footprint 2008/09 report stated that an Internal Audit review of the data had concluded that there were problems with the heating / cooling and lighting in the Maidstone House offices which had had a negative impact on energy usage. It was recommended that the issues were resolved promptly to stop any impact on the data for 2009/10.

1.3.24 From the data presented above it would appear, that issues resulting in an increased gas use over the first half of the year, appear to have been dealt with well, considering the 60% decrease in emissions over this period. However the electricity use from the building appears to be similar to that identified for the first half of 2008/09 indicating that there might still be some work to do with regards to decrease electricity usage in these offices.

VEHICLES

1.3.25 From Table 1 it can be seen that in the first half of 2008/09, 97% of the vehicle emissions came from the service fleet (including the waste collection services) and only 3% were due to business travel. In the first half of 2009/10, 96% of the emissions were from the service fleet and 4% were due to business travel.

1.3.26 There were some notable changes to the CO_2 emissions from different sources which are highlighted in Table 3.

Table 3: Changes in CO_2 Emissions (Vehicles)

Site or Group	CO_2 emission (tonnes)		Comparison	
	2008/09	2009/10	Change (tonnes)	% Change

Waste Collection Service	558.52	465.41	-93.12	-16.67%
Maidstone Borough Services	265.60	252.32	-13.28	-5.00%
Essential / casual / lease car users	26.86	35.83	8.96	33.37%
Park & Ride Service	190.38	194.57	4.18	2.20%
TOTAL	**1,047.44**	**954.52**	**-92.91**	**-8.87%**

1.3.27 It can be seen that the total annual CO_2 emissions from Council vehicle use has decreased by 8.87% since last year.

1.3.28 Emissions from the waste collection service have decreased by 16.67% and emissions from essential/casual/lease car users have increased by 33.37%. The emissions from Park and Ride buses have increased by 2.20%. However this figure for the increase in emissions by the Park and Ride Service is approximate as this value has been estimated in part. As of the 30th March 2009 the Park and Ride network and operation was significantly changed. This meant that the service from the London Road Park and Ride was no longer wholly provided by dedicated vehicles. There are 3 buses serving this Park and Ride location during peak times but they operate on other (non MBC) routes at other times and days. During the off-peak period a local bus diverts to the Park and Ride site. As such only the information for the dedicated services covering Sittingbourne Road and Willington Street was able to be obtained. As of the 2nd November the operation has changed again. Now there are dedicated Park and Ride buses on all 3 routes, therefore enabling the data to be more accurate for the remaining part of the year.

1.3.29 Therefore the figure obtained for the 2 bus routes for which data was available was used to approximate the number of litres of fuel used by the London Road site, to enable a more realistic figure to be included in the data set.

1.3.30 The highest emitting vehicle sources of CO_2 are shown in Table 4.

Table 4: Top CO_2 Emitters (vehicles)

Site or Group	**CO_2 emission (tonnes)**	
	2008/09	**2009/10**
Waste Collection Service	558.52	465.41
Maidstone Borough Services	265.60	252.32
Essential/casual/lease car users	26.86	35.83
Park & Ride Service	190.38	194.57

1.3.31 Table 4 shows that in comparison to the first half of 2008/9 the CO_2 emission for the first half of 2009/10 has decreased for 2 of the 4

main CO_2 emitting vehicle groups, and this occurred in the two groups which had the highest emissions.

PERFORMANCE AGAINST TARGETS

1.3.32 In November 2008 Cabinet set annual 3% carbon reduction targets, aiming for a 20% reduction by 2016 and 30% by 2021.

1.3.33 Table 5 shows the targets, based on a 3% reduction from the baseline, compared to the actual emissions. It also shows a revised target, based on a 3% reduction in the actual emissions from 2008/09.

Table 5: Target CO_2 emissions

Year	Tonnes of CO_2		
	Target (from baseline)	**Actual**	**Revised target based on results for 2008/09**
Baseline 2006/7	6759	6759	-
2007/08	6556	5868	-
2008/09	6359	6072	-
2009/10	6168	?	5890

1.3.34 If the results for the first half of 2009/10 are compared to the target and the revised target, they make up 42% of the target (calculated as a 3% reduction in CO_2 from the baseline in 2006/07) and 44% of the revised target (based on a 3% reduction on the last years CO_2 emissions).

1.3.35 If these are compared to the equivalent from last year, the results for the first half of 2008/09 made up 42% of the target and 47% of the revised target.

1.3.36 The CO_2 emissions from the first half of 2008/09 made up 44% of the total emissions for the year, indicating that the emissions for 2009/10 relative to the targets (both actual and revised); appear at this rate to be achievable.

1.3.37 Even though the targets do seem achievable at present, the 1.87% increase in emissions from buildings should be considered carefully to ensure that this trend is reversed as soon as possible, to help towards reducing the Council's Carbon Footprint for the whole of 2009/10.

1.3.38 One of the decisions made as a result of the Carbon Footprint 2008/09 Report was that a Carbon Reduction Action Plan was established to reduced energy and fuel use to help achieve the 3% reduction in CO_2 emissions from council operations. This recommendation is re-iterated in this report.

1.3.39 This Carbon Reduction Plan will be supported by the Energy Saving Trust Local Authority One-to-One Support Programme which has now reached Stage 4 (Action Plan Development), so this recommendation can now be taken forward (see Section below on the Energy Saving Trust One-to-One Programme).

DEVELOPMENT OF AN ACTION PLAN

1.3.40 In the Carbon Footprint Report for 2008/09, a number of buildings were 'flagged up' by the NI185 spreadsheet toolkit, as being buildings which were using more energy than considered necessary. This was based around benchmarks provided by DEFRA for energy use per m^2, which describe typical amounts of energy used in certain building types.

1.3.41 The 2008/09 and 2009/10 results for energy use in the first half of the year were compared to these benchmarks and Table 6 below shows the buildings that were flagged up as having exceeded their benchmark energy use for a year, after just six months.

Table 6:Building exceeding the DEFRA energy use benchmarks for the first half of 2008/09 and 2009/10 (exceedances are shown in ***bold italics*** in the table)

Building or Site	**kWh Energy Used Q1 and Q2**		**Benchmark kWh (based on a period of 1 year)**	**Change**	**% Change**
	2008/09	**2009/10**			
MBC Offices Maidstone House (electricity)	*385,005*	*539,915*	*776,988*	*154,910*	*40.24%*
Cobtree Golf Course Club House	***103,018***	***86,066***	*22,059*	*-16,952*	*-16.46%*
Penenden Heath Pavillion	*4,743*	***9,248***	*7,359*	*4,505*	*94.98%*
Vinters Park Crematorium (electricity)	**314,927**	**246,952**	*88,480*	*-67,975*	*-21.58%*
Hazlitt Theatre (electricity)	**120,353**	**101,554**	*44,850*	*-18,799*	*-15.62%*
Hazlitt Theatre (gas)	***196,553***	*148,609*	*192,410*	*-47,944*	*-24.39%*
MBC Armstrong Depot	*37,311*	***40,799***	*37,440*	*3,488*	*9.35%*

Block C Offices	*2,599*	***17,151***	*8,208*	*14,552*	*559.91%*

1.3.42 It should be noted that the DEFRA benchmark criteria are not fine enough to make this comparison robust. It simply indicates where further investigation and action should be directed.

1.3.43 A number of these buildings match those identified as exceedances for the year 2008/09.

1.3.44 The Council's depot on Armstrong Road (and the associated Block C Offices) is among the sites identified in Table 6. Currently a new depot is being constructed which includes a number of energy efficiency measures including solar hot water, rainwater harvesting and improved insulation. It is hoped that the move to these offices will help to elevate some of the problems encountered with energy usage at the old offices. The move to the new offices is due to happen at the beginning of December 2009.

1.3.45 Although the results for electricity usage at the MBC offices at Maidstone House do not exceed the year benchmark, at this point in 2009/10, 69.5% of the electricity that should be consumed by this type of building has been used. These results confirm that the problems mentioned above (in the Buildings section) with regards to Maidstone House, although appear to have improved with respect to the gas usage, have not been alleviated with respect to the electricity usage. It is recommended that immediate action is taken to improve the situation at Maidstone House.

1.3.46 It is noted from Table 6, that even though the kWh of energy used by Cobtree Golf Course Club House, Vinter's Park Crematorium, and the Hazlitt Theatre exceed the year benchmark after only half a year, the amount of energy used has decreased between15.6% and 24.39% from the equivalent period in 2008/09.

1.3.47 As noted above, a Carbon Reduction Action Plan is recommended to reduce energy and fuel usage to help achieve the 3% reduction in CO_2 emissions from Council Operations.

1.3.48 It is further recommended that prior / during the production of this action plan (for the proposed timescale of the action plan see Energy Savings Trust Section below) that the buildings highlighted in Table 6 and those seen in the Carbon Footprint 2008/09 Report, are considered for the installation of microgeneration technologies and other energy efficiency measures to help combat rising fuel bills and to reduce the amount of energy consumed at each site, thereby reducing the council's carbon footprint. Information on possible grants and funding avenues can be found in the following sections below;

- The Salix Energy Efficiency Loans Scheme
- Low Carbon Buildings Programme – Phase 2 Extended

1.3.49 It is recommended that only a small number of buildings are specifically targeted for the inclusion of microgeneration technologies and energy efficiency measures through this scheme. The decision of which buildings to target and progression through environmental audits and then the funding / grant process should be completed swiftly to ensure that projects are initiated at an early stage, to enable the rewards and benefits of these to be felt at the earliest possible stage.

1.3.50 Sometime in the next 2 months (unknown date at this stage due to weather constraints) a thermo-graphic survey is being undertaken of the Hazlitt Theatre, the Maidstone Museum, the Town Hall and the Archbishops Palace. It is thought that this will be able to help identify potential areas in these buildings which could be targeted for energy efficiency measures. It is recommended that these surveys are used to help guide any recommendations for any energy efficiency measures in these buildings.

THE ENERGY SAVING TRUST LOCAL AUTHORITY ONE-TO-ONE SUPPORT PROGRAMME

1.3.51 Maidstone Borough Council is part of the EST Local Authority One-to-One Support Programme and is at Stage 3 of the process having now received a draft copy of the 'Local Area Carbon Emissions Report'.

1.3.52 Representatives of the EST have come to present the report to the operational group of officers who have been involved in the scheme. At the beginning of January the operational group are attending an 'Action Plan Development' session with officers from the EST which will represent Stage 4 of the 7 stage process. To keep with the EST schedule for this programme, the Action Plan will require sign off by the 31st March 2010.

THE SALIX ENERGY EFFICIENCY LOANS SCHEME

1.3.53 In the Carbon Footprint 2008/09 report the opportunities that were being offered via the Salix Energy Efficiency Loans Scheme were discussed and Cabinet made a decision to put forward bids for the scheme to fund some early actions on carbon reduction.

1.3.54 The Carbon Footprint 2008/09 report stated that officers were in the process of putting together some potential bids and the options would

go before Corporate Management Team with a view to applying to the scheme in September 2009.

1.3.55 Unfortunately in the interim period between the report mentioned above, and this current report, little progress has been made on with respect to the potential bids. When the previous EMS Project Manager left the Council, no consensus on which buildings to target had been reached and this is how the situation currently stands.

1.3.56 The final closing date for applications is December 31st 2009. If any applications are to be made to the scheme, then these need to be advanced as soon as possible.

LOW CARBON BUILDINGS PROGRAMME – PHASE 2 EXTENDED

1.3.57 The Low Carbon Buildings Programme – Phase 2E (LCBPP2E) is a Department for Energy and Climate Change (DECC) scheme offering grants for microgeneration installations by public sector and charitable organisations. Qualifying organisations can apply for 50% of the project cost of installing microgeneration technologies.

1.3.58 Since the Budget announcement on 22nd April 2009 an additional £45 million has been allocated to the Low Carbon Buildings Programme (LCBP), of which £35 million has been assigned to the LCBP Phase 2. As such the project has been extended, and the deadline for grants to be made and installations to be completed has extended from 1st July 2009 until April 2011.

1.3.59 Organisations are able to apply for a maximum of up to £200,000 in grant funds per site and site's are able to include more than one building and multiple applications from one organisation for different sites will be considered.

1.3.60 With the proximity of the deadline of the Salix Energy Efficiency Loans Scheme, and given that the Low Carbon Buildings Programme – Phase 2 Extended provides a grant, not a loan, it is considered that moving forward with renewable technologies through this avenue might me a more viable option.

1.3.61 Although this funding stream does not account for the upgrading of current equipment (through non-renewable avenues), with the timescales imposed by the Salix Energy Efficiency Loans Scheme, it is thought to be more practical.

1.3.62 Any funding obtained through the LCBPP2E, will provide 50% of the costs of any proposed microgeneration technologies. This will therefore require the remaining cost of any projects to be met by the

Council. 'Invest to Save' bids are proposed to cover the remaining costs of the projects, as any projects considered will have a pay-back period in-line with the invest to save principles.

CLIMATE CHANGE OFFICERS' WORKING GROUP

1.3.63 It is proposed that the Climate Change Officers' Working Group is revived to enable the recommendations of the report to be taken forward, to ensure that there is commitment throughout the council to tackle climate change, to ensure cohesion between all departments involved with tackling climate change and to help implement the proposed Climate Change Action Plan.

DATA LIMITATIONS

1.3.64 The limitations of using the collected data to establish a carbon footprint have been explained in previous reports. Much of the data used in this report has not been recorded for this purpose and in some cases data has had to be estimated.

1.4 Alternative Action and why not Recommended

1.4.1 The Council could decide not to devise a Carbon Reduction Action Plan. However, such an approach is very unlikely to achieve its stated aims of carbon reduction in this way. A robust plan is needed to ensure carbon reduction actions are appropriate and results are measurable.

1.4.2 The Council could decide not to consider the inclusion of microgeneration technologies and energy efficiency measures in the worst performing Council buildings at this stage, and wait to act following the recommendations of the Carbon Reduction Action Plan. However, if this approach is taken it will delay further the effects of any technology / measures installed or applied to the buildings, which will have a negative impact on the Carbon Footprint of the council for a greater period of time than if this was tackled straight away.

1.5 Impact on Corporate Objectives

1.5.1 This decision is directly related to achieving the following Key Objective from the current Strategic Plan:

"Reduce energy, water and material consumption in Council-owned properties and improve energy efficiency across the borough through

Development Plan Documents and the use of other initiatives including private sector housing grants. The Council will also encourage these activities through appropriate partnerships."

1.6 Risk Management

1.6.1 The risk of not achieving reductions in the Council's carbon emissions has been identified. This will be managed by developing, implementing and maintaining a robust Carbon Reduction Action Plan, within which carbon reduction activity will be coordinated. It will be supported through the application for grants and funding to install microgeneration technologies and energy efficiency measures in Council buildings to help reduce the amount of energy used.

1.6.2 A reputation risk has been identified as being associated with not achieving carbon reduction. This risk is being managed by maintaining a systematic and evidence based approach to carbon reduction target setting, basing decisions on robust data and best practice, and setting challenging and measurable targets.

1.7 Other Implications

1.7.1

1.	Financial	x
2.	Staffing	
3.	Legal	
4.	Equality Impact Needs Assessment	
5.	Environmental/Sustainable Development	x
6.	Community Safety	
7.	Human Rights Act	
8.	Procurement	
9.	Asset Management	x

1.7.2 Financial: Energy saving actions, arising from this decision, are likely to lead to financial savings. However, investment may be required to conduct environmental audits of sites and the inclusion of renewable technologies will require funding via the Invest to Save bids, to compliment external funding.

1.7.3 Environmental/Sustainable Development: This decision will increase the council's ability to deliver improved environmental performance from its own operations. In continuing to get its own house in order it can become a community leader in Climate Change adaptation and mitigation.

1.7.4 Asset Management: This decision will have an impact on asset management as the buildings considered are assets of the Council and the inclusion of renewable technologies or energy efficiency measures will require management.

1.8 Background Documents

1.8.1 Record of Decision of the Cabinet, dated 12th August 2009, "Carbon Footprint 2008/09".

1.8.2 Record of Decision of the Cabinet, dated 11th February 2009, "Review of the Environmental Sustainability of the Waste Collection Service".

1.8.3 Record of Decision of the Cabinet, dated 12th November 2008, "Reducing The Council's Carbon Footprint".

NO REPORT WILL BE ACCEPTED WITHOUT THIS BOX BEING COMPLETED

Is this a Key Decision? Yes [ ] No [x]

Is this an Urgent Key Decision? Yes [ ] No [x]

Reason for Urgency

How to Comment

Should you have any comments on the issue that is being considered please contact either the relevant Officer or the Member of the Executive who will be taking the decision.

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APPENDIX A:
NI 185 SPREADSHEET AMENDMENT

To enable the CO_2 emissions (weather corrected) to be calculated on a six month basis, a small amendment to the DEFRA spreadsheet tool was required.

At present, the CO_2 emissions directly calculated from the amount of energy used, are then weather corrected. This is then done by taking into account the number of degree days a region has experienced over the relevant date range of the data, in this case a whole year. It should be noted that only the energy type used is 'Natural Gas' does this correction apply. If the energy type used is 'Electricity (grid)' or 'Electricity – CHP' then no weather correction occurs.

Degree days are the daily difference in temperature between a base temperature and the 24 hour mean outside temperature (when the base temperature is higher than the maximum daily temperature). The degree day figure therefore quantifies how cold (or hot) the weather has been in a given region and is usually expressed as a single index number for each month. In the case of the DEFRA spreadsheet tool, the figures for each month, spanning the financial year in question, are added together to produce a figure for the entire year.

When the CO_2 emissions are corrected according to this degree day factor the following calculation occurs;

$$\text{CO}_2 \text{ emission (weather corrected) (kg)} = \text{CO}_2 \text{ emission (kg)} \times \frac{2462}{\text{No. of degree days}}$$

The figure '2462' seen in the calculation above represents the 20 year average degree day standard for 1 year, for the UK. Therefore the CO2 emission (kg) is multiplied by the proportion of degree days a region experienced compared to the 20 year average.

As the calculation compares the number of degree days entered in the spreadsheet to a yearly average, it requires an entry for the number of degree days over the period of a year for the calculation to work

As such, when the number of degree days over the first two quarters of 2009 were entered into the spreadsheet, the results were distorted.

The table identified through the following;

http://vesma.com/ddd/20year07.htm

identifies the 20 year average degree days for the UK on a monthly basis for every region in the UK. The values for the six months in question (April, May, June, July, Aug, Sept) for the south-eastern region were added together to give a 20 year average for the period of time over which the energy figures were based.

This figure was 461. The calculation in the spreadsheet was then changed to the following;

$$\text{CO}_2 \text{ emission (weather corrected) (kg)} = \text{CO}_2 \text{ emission (kg)} \times \frac{461}{\text{No. of degree days}}$$

This enabled a weather correction to be applied for the six months in question and a more accurate CO_2 emission to be calculated.

Should this correction have not been applied then on the weather corrected CO_2 emissions would not have been able to be calculated, making comparison to previous data more challenging, and would resulted in inaccurate data being produced.