

## **MAIDSTONE BOROUGH COUNCIL**

### **RECORD OF DECISION OF THE CABINET MEMBER FOR ENVIRONMENT**

Decision Made: 12 August 2011

#### **CARBON FOOTPRINT 2010/11**

##### **Issue for Decision**

To consider the Council's carbon footprint for 2010/11 and the new way in which this is calculated and reported.

##### **Decision Made**

1. That the reported figures for CO<sub>2</sub>e emissions from the Council's operations during 2010/11 which indicate an 8.58% increase from 2009/10 be noted.
2. That the reasons behind the increase in emissions seen be noted.
3. That the publishing of the 'Greenhouse Gas Emissions from Local Authority Owned Estate and Operations' report set out at Appendix C of the report of the Assistant Director of Regeneration and Cultural Services, which outlines the greenhouse gas emissions from Maidstone Borough Council for 2009/10 and 2010/11, and conforms to the format requested by the Department of Energy and Climate Change be agreed.

##### **Reasons for Decision**

The report of the Assistant Director of Regeneration and Cultural Services presents the Council's carbon footprint for 2010/11 and compares it against the carbon footprint for 2009/10 and details progress against the Council's annual carbon reduction targets.

Further, the report of the Assistant Director of Regeneration and Cultural Services outlines the new way (following a change in guidance by the Department of Energy and Climate Change (DECC)) in which the council's carbon footprint is calculated and represented, and the requests made by DECC with respect to reporting and publishing of relevant information.

##### **Changes to Reporting Procedures**

On the 13<sup>th</sup> April 2011, Gregory Barker MP, sent a letter to all Chief Executives of Councils in England outlining how Chris Huhne, Secretary of

State for Energy and Climate Change, signed a Memorandum of Understanding (MOU) with the Local Government Group that recognised the pivotal role that local councils have in tackling climate change. This letter is set out at Appendix A to the report of the Assistant Director of Regeneration and Cultural Services.

Through DECC's support of the MOU they have requested that local councils measure and report their greenhouse gas emissions from their own estate and operations in accordance with the joint DECC & Defra guidance that was published in September 2009 (<http://www.defra.gov.uk/publications/2011/03/26/ghg-guidance-pb13309/>).

The measurement and reporting methods outlined in the guidance are based on the Greenhouse Gas (GHG) Protocol, the internationally recognised standard for the corporate accounting and reporting of GHG emissions. The most widely accepted approach to detailing the GHG emissions is to identify and categorise emissions-releasing activities into three groups, also known as scopes. The three scopes are:

- Scope 1 (Direct emissions): Activities owned or controlled by your organisation that release emissions straight into the atmosphere e.g. emissions from combustion in owned or controlled boilers and vehicles;
- Scope 2 (Energy indirect): Emissions being released into the atmosphere associated with your consumption of purchased electricity, heat, steam and cooling. These are indirect emissions that are a consequence of your organisations activities but which occur at sources you do not own or control; and,
- Scope 3 (Other indirect): Emissions that are a consequence of your actions, which occur at sources which you do not own or control and which are not classed as Scope 2 emissions e.g. business travel by means not owned or controlled by the organisation and purchased materials or fuels.

Carbon dioxide produced from the combustion of biomass/biofuels should be reported separately to emissions in Scopes 1, 2 and 3.

Previously, emissions were split between stationary (i.e. all fuel/electricity usage at all buildings) and transport.

In addition, only the direct emissions were calculated. The new guidance also calculates the indirect emissions associated with the extraction and transportation of primary fuels as well as the refining, distribution, storage and retail of finished fuels. These are known as fuel cycle or well-to-tank emission factors, thereby enabling life-cycle emissions to be calculated. These associated indirect emissions are included under Scope 3 emissions.

The changes outlined above in the reporting methods mean that the footprints reported below, are difficult to compare with those presented previously. As such we have taken this new methodology and used a baseline year of 2008/09 (in-line with the Carbon Management Plan) and revised the targets to match this methodology for comparison purposes.

## The Councils GHG Emissions for 2010/11

As discussed above, the GHG emissions presented in Table 1 have been calculated using the methodology and emission factors as set out in the DEFRA and DECC Guidance. The emissions are presented as absolute emissions, but the weather corrected emissions can be found in Appendix B for comparison. The emissions for 2009/10 and 2008/09 are also shown for comparison.

Table 1 compares the GHG emissions from 2010/11 with those for 2009/10, and 2008/09. It can be seen that the GHG emissions for 2010/11 were 6,101 tonnes CO<sub>2</sub>e compared to 5,619 tonnes CO<sub>2</sub>e in 2009/10 and 6,255 tonnes CO<sub>2</sub>e in 2008/09. This equates to an 8.58% increase in emissions between 2009/10 and 2010/11.

During the period this figure was calculated, Mote Park Leisure Centre was undergoing a major refurbishment and was providing a reduced service. If the energy usage figures for 2009/10 were replaced with the figures for 2008/09 (a full year of usage) then the total annual emissions would have been 5,897 tonnes of CO<sub>2</sub>e. This would mean that the emissions in 2010/11 were 3.46% higher than for 2009/10, as opposed to the 8.58% reported in 1.3.10. As such, even if allowances are made for the closure of Mote Park Leisure Centre, the emissions still increased.

Table 1: Absolute GHG Emissions Data 2010/11 (tonnes)

<b>Emissions Summary</b>	Year		2010/11
<b>Maidstone Borough Council - Carbon Footprint</b>			
GHG Emissions Data for Period 1 April 2009 to 31 March 2010 and 1 April 2010 to 31 March 2011			
	Tonnes CO <sub>2</sub> e	Tonnes CO <sub>2</sub> e	Base Line Year
	2010/11	2009/10	2008/09
Scope 1 <sup>1</sup>	3,369	2,942	3,551
Scope 2 <sup>2</sup>	1,899	1,880	1,848
Scope 3 <sup>3</sup>	833	797	856
Outside of Scope (not included in gross emissions) <sup>4</sup>	34	9	7
<b>Total Gross Emissions</b>	<b>6,101</b>	<b>5,619</b>	<b>6,255</b>
Carbon Offsets / Green Tariff	0	0	0
<b>Total Annual Net Emissions</b>	<b>6,101</b>	<b>5,619</b>	<b>6,255</b>

<sup>1</sup> Includes all natural gas use by Council owned buildings and those operated by the Council. Furthermore includes all emissions from owned or controlled vehicles including the Waste Collection Service and Park and Ride Service.

<sup>2</sup> Includes the consumption of all purchased electricity associated with Council operations.

<sup>3</sup> Includes all emissions associated with water supply, the transportation of purchased fuels (the Scope 3 emissions associated with Scope 1 emissions), employee business travel by non-owned means, electricity related activities (the Scope 3 emissions associated with the Scope 2 emissions) and the Scope 3 emissions associated with the Biomass Boiler

<sup>4</sup> Accounts for the amount of CO<sub>2</sub> emitted by the biomass when it is combusted, which will be equivalent to the CO<sub>2</sub> absorbed in the growth of the biomass. This is not included in the Scopes as the CO<sub>2</sub> would have been emitted anyway when the plants - from which the biomass is derived - decayed naturally at the end of their life.

For a detailed look at the reduction in emissions noted between 2008/09 and 2009/10 please refer to the background document noted in 1.8.5 of the report of the Assistant Director of Regeneration and Cultural Services.

In terms of the individual scopes the yearly comparison between 2009/10 and 2010/11 is as follows:

- Scope 1: 14.52% increase
- Scope 2: 0.97% increase
- Scope 3: 4.57% increase

In terms of the breakdown between scopes, Scope 1 emissions accounted for 55.2% of the total emissions for 2010/11, Scope 2 for 31.1% and Scope 3 for 13.7%.

Table 2 below shows the emissions breakdown within each scope of the main sources that make up each scope, and this has been done for 2008/09, 2009/10 and 2010/11.

Table 2: GHG Emissions – Scope breakdown (tonnes)

<b>Emissions - Scope Breakdown</b>			
	<b>GHG Emission 2010/11 tonnes CO<sub>2</sub>e</b>	<b>GHG Emission 2009/10 tonnes CO<sub>2</sub>e</b>	<b>GHG Emission 2008/09 tonnes CO<sub>2</sub>e</b>
<b>Scope 1</b>			
Fuel Consumption - Buildings	1,608	1,192	1,563
Owned / Controlled Transport	1,762	1,750	1,988
<b>Total Scope 1</b>	<b>3,369</b>	<b>2,942</b>	<b>3,551</b>
<b>Scope 2</b>			
Purchased Electricity	1,899	1,880	1,848
<b>Total Scope 2</b>	<b>1,899</b>	<b>1,880</b>	<b>1,848</b>
<b>Scope 3</b>			
Water Supply	7	7	9
Business Travel	85	94	75
Transport Emissions from Fuel Use	490	447	528
Transport Emissions from Biomass Boiler Use	2	0	0
Emissions associated production of Electricity	250	248	244
<b>Total Scope 3</b>	<b>833</b>	<b>797</b>	<b>856</b>

### Scope 1

The Scope 1 emissions are split in Table 2 between fuel consumption (specifically natural gas usage) in buildings and owned / controlled transport. It can be seen that the emissions from transport marginally increased but the main source of the increased emissions from this Scope are from the fuel consumption (natural gas) in buildings.

In 2009/10 Mote Park Leisure Centre was operating a much reduced service due to a major refurbishment that occurred, so it was expected that when a full service was resumed in 2010/11, that emissions from this building would increase, which was evidenced. However, there were significant increases in the emissions from other buildings as well, which are shown below in Table 3.

Table 3: Scope 1 Fuel Emissions from Buildings

<b>Building</b>	<b>Total Scope 1 Emissions CO<sub>2</sub>e (tonnes) 2009/10</b>	<b>Total Scope 1 Emissions CO<sub>2</sub>e (tonnes) 2010/11</b>	<b>% change 2009/10 to 2010/11</b>	<b>% of emissions from Scope 1 fuel consumption emissions for 2010/11</b>	<b>% of total GHG emissions for 2010/11</b>
Mote Park Leisure Centre	713.00	975.56	36.83%	60.67%	15.99%
Vinters Park Crematorium	121.15	168.18	38.82%	10.46%	2.76%
Hazlitt Arts Centre	89.63	138.46	54.49%	8.61%	2.27%
Maidstone House & Gateway	75.13	104.42	38.99%	6.49%	1.71%
Town Hall	18.82	24.59	30.65%	1.53%	0.40%
Fant Hall	9.98	22.07	121.18%	1.37%	0.36%
New Parkwood Depot	14.76	18.33	24.21%	1.14%	0.30%
Senacre Community Hall	8.95	17.49	95.34%	1.09%	0.29%
Crematorium Admin Offices	2.31	6.81	194.07%	0.42%	0.11%

The table above clearly highlights that a number of the key buildings in the Maidstone Borough Council portfolio have experienced a significant increase in emissions between 2009/10 and 2010/11. The most notable of these, both in the sense of the size of the emissions increase, and the size of the impact on the overall emissions are Vinters Park Crematorium, The Hazlitt Arts Centre and Maidstone House.

Vinters Park Crematorium underwent a refurbishment in late 2009, although the GHG emissions in 2009/10 were only marginally less than in 2008/09. In the first full year of operation post the refurbishment the emissions have increased by 38.82%. Additional equipment (in the form of mercury abatement kit) was installed in this refurbishment (thereby increasing the load) as well as more efficient cremators (reducing the number of cremators from 3 to 2). Investigations are underway to establish the cause of the increase (given there was no increase in the number of cremations).

In the case of the Hazlitt Theatre and Maidstone House (and to some extent Vinters Park Crematorium) the large increase in usage is likely to have been caused in part by the severe winter that occurred in 2010/11 and the extra fuel used to maintain an acceptable temperature in the buildings. Furthermore, in the case of Maidstone House, the biomass boiler was being recommissioned over the winter period and is ongoing, and was therefore not able to provide a significant proportion of the heat for Maidstone House. It is planned that the continued work on this boiler is completed over the summer period, ready for the 2011/12 winter. It should also be noted that in the case of Maidstone House & Gateway, when this usage is broken down month by month, the main increase in usage compared to 2009/10 was seen in the months from April to October.

The weather corrected emissions set out at Appendix B of the report of the Assistant Director of Regeneration and Cultural Services indicate the effects of this harsh winter more clearly. Weather correction works by altering the emissions from natural gas usage based on the number of degree days experienced over the time period of the data. In 2009/10 there were 2206 degree days compared to 2414 in 2010/11. When these are considered and factored in, the difference in total annual emissions between 2009/10 and 2010/11 is 6.33% compared to 8.58% when this is not considered. As such, it can be seen that a proportion of the emissions increase experienced between 2009/10 and 2010/11 was due to the colder conditions experienced during that period.

## Scope 2

The Scope 2 emissions include the electricity use at all Council owned or controlled buildings. When the emissions from 2009/10 and 2010/11 are compared, a small increase of 0.97% in emissions is seen.

There were some changes in emissions from electricity usage at a number of buildings and these are shown in Table 4 below.

Table 4: Scope 2 Emissions

<b>Building</b>	<b>Total Scope 1 Emissions CO<sub>2</sub>e (tonnes) 2009/10</b>	<b>Total Scope 1 Emissions CO<sub>2</sub>e (tonnes) 2010/11</b>	<b>% change 2009/10 to 2010/11</b>	<b>% of emissions from Scope 1 fuel consumption emissions for 2010/11</b>	<b>% of total GHG emissions for 2010/11</b>
Maidstone House	538.89	592.93	10.03%	31.22%	9.72%
Maidstone Gateway	122.82	134.66	9.64%	7.09%	2.21%
New Parkwood Depot	40.98	98.65	140.70%	5.19%	1.62%
Vinters Park Crematorium	45.76	49.10	7.29%	2.59%	0.80%
Cobtree Golf Course Club House	96.51	89.05	-7.73%	4.69%	1.46%

It can be seen that there was a 10.03% increase in the electricity used at Maidstone House, and a 9.64% increase in the electricity used at Maidstone Gateway. It is thought that these increases are due to the fact that there were a large number of electric heaters used to heat the building during the winter months, when the usage peaked the most compared to 2009/10, as the temperature generated by the main heating did not reach an appropriate level for staff to work in.

The increase in electricity seen at the New Parkwood Depot was also expected as the depot only opened in December 2009 and as such was

only operational for a quarter of the 2009/10 baseline but was fully operational in 2010/11.

Furthermore, the emissions from Cobtree Golf Course Club House reduced by a further 7.73%, following on from a 16.5% reduction between 2008/09 and 2009/10.

### Scope 3

Table 2 shows that there was a small, 4.57% increase in Scope 3 emissions. This was predominately due to the increase in emissions associated with the extraction and transportation of primary fuels as well as the refining, distribution, storage and retail of finished fuels, which are associated with both Scope 1 and Scope 2 emissions.

It is also noted that the emissions associated with Business Mileage decreased by 9.57%.

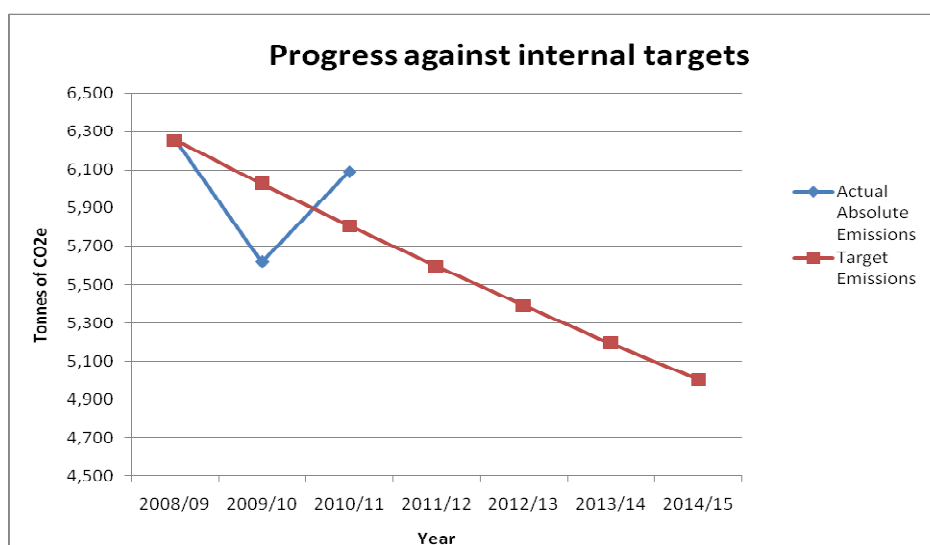
### Performance against Targets

In April 2011 Cabinet agreed the Carbon Management Plan which aims to reduce CO<sub>2</sub>e emissions by 20% by March 2015, from a 2008/09 baseline. These targets were calculated based on a different methodology to that used to calculate the GHG emissions presented in this report. These targets have been superimposed onto this methodology and the progress against the Councils target is shown in both Table 5 and the graph below.

Table 5: Comparison between Actual and Target GHG Emissions

Year	Target GHG Emissions	Actual Absolute GHG Emissions
2008/09	6,255	6,255
2009/10	6,026	5,619
2010/11	5,806	6,101

Graph 1: Progress against internal targets





It can be seen that the emissions in 2009/10 were 6.76% below the designated target for that year. However, the increase in emissions experienced in 2010/11 means that actual performance was 5.08% over the target for that year.

It should be noted that if the weather corrected emissions are considered (set out at Appendix B of the report of the Assistant Director of Regeneration and Cultural Services) this shows a similar pattern, in that the targets for 2010/11 are missed, but these are only missed by 1.35%, which indicates further the effect the weather has had on the emissions from last year, when compared to years before.

### Carbon Management Plan

The Carbon Management Plan which was adopted in April 2011, outlines the way in which the Council aims to reduce CO<sub>2</sub>e emissions by 20% by March 2015, from a 2008/09 baseline, and embed carbon management into the organisation.

The Carbon Management Plan (CMP) sets out the projects aimed to reduce the Council's emissions, and through the implementation of the actions, the Council will continue to seek to reduce its emissions. The Carbon Management Team who worked to produce the CMP has set up a process for project identification which will be used to identify new opportunities, in addition to those already in the plan.

The CMP was in development during 2010/11 and the majority of actions have only just begun to be implemented / taken forward (as of May 2011), so the effects of these are yet to be seen.

The following projects are in the process of being planned / implemented and should all contribute towards reducing the amount of energy used by the Council.

In addition to the actions identified in the table, the areas where the greatest increases in emissions have been seen will be investigated on a site by site and source by source basis, to identify any specific problems and potential solutions as soon as possible.

Table 5: Carbon Management Plan Projects

<b>Project Name</b>	<b>Description</b>	<b>Target Completion Date</b>
Recommissioning the Biomass Boiler	Recommissioning the biomass boiler at Maidstone House, which we have not been able to use properly.	October 2011
Fleet Reduction and Improvement	Rationalisation of the depot vehicle fleet and phased replacement of older vehicles within the fleet over 5 years.	2015
Staff Awareness & Training and Energy Policy	Staff awareness campaign to help highlight to staff how they can help reduce CO2 emissions at work. Energy policies for each Council building will also be written.	May 2012
Monitoring & Targeting (M&T) and Reducing the Electrical Baseload	Use / create an M&T system to build up profiles of usage to enable more accurate targeting. Reducing the electrical baseload involves reducing the electricity demand during periods of minimal use.	December 2012
Installation of Solar Film	Maidstone House is subject to solar gains increasing the amount of air conditioning required. Solar film reduces glare and heat gains on sunny days reducing the load on the air conditioning.	May 2012
Hazlitt Services Upgrade	Replacing four heating boilers, associated pipe work, controls and radiators, as well as the main electrical distribution board, and installing a new emergency lighting system.	November 2011

Submission of Information to DECC

DECC is requesting that each local authority publishes its own GHG report locally on its own website by the end of July each year, and for this year, that data on the GHG emissions for both 2009/10 and 2010/11 is published. In addition, it has been requested that this information is emailed straight to DECC.

Set out at Appendix C of the report of the Assistant Director of Regeneration and Cultural Services is the proposed GHG Report for Maidstone Borough Council covering all the points which are recommended for inclusion.

Data Limitations

The limitations of using the collected data to establish a GHG Emissions report have been explained in previous carbon footprint reports. It should

be re-iterated however that much of the data used in the report this has not been recorded for the specific purpose of compiling a carbon footprint and in some limited cases data has had to be estimated.

### **Alternatives considered and why rejected**

The Council could decide not to publish a GHG Report on the Council's website, nor submit the GHG Emissions data for 2009/10 or 2010/11 to DECC. However, such an approach is not recommended due to the reputational risk associated with not submitting information and making this publicly available.

### **Background Papers**

Record of Decision of the Cabinet, dated 13th April 2011, "Carbon Management Plan".

Record of Decision of the Cabinet Member for Environment, dated 11th February 2011, "Carbon Footprint 2009/10".

Record of Decision of the Cabinet Member for Environment, dated 15th January 2010, "Quarter 1 & 2 Carbon report 2009/10".

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

Record of Decision of the Cabinet, dated 11th February

<p>Should you be concerned about this decision and wish to call it in, please submit a call in form signed by any two Non-Executive Members to the Head of Change and Scrutiny by: <b>19 August 2011</b></p>
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