APPENDIX B

Energy Management update report – Overview and Scrutiny Management Commission, 8th April 2014.

1.0 Introduction

1.1 The following report is written as an update for the Overview and Scrutiny Management Commission, following the original report in April 2012.

2.0 Statutory Legislation

2.1 As stated in 2012, the Carbon Reduction Commitment: Energy Efficiency Scheme (CRC) mandatory scheme is still in operation. The Energy Management Team (EMT) is responsible for the CRC process on behalf of the authority.

2.2 West Berkshire Council, including maintained schools and academies, remains subject to Phase 1 of the CRC scheme.

2.3 Table 1 below shows the Council's submissions to the Environment Agency in terms of carbon dioxide emissions from its building estate (inc schools) over Phase 1 of the scheme. Consumption and associated emission figures for the financial year are collated and reported retrospectively by July of the following financial year so the figures for 2013/14 are yet to be calculated.

Table 1: Council (inc Schools) CRC Phase 1 reported emissions.

	Compliance Year			
	10/11	**11/12**	**12/13**	**13/14**
CO2 emissions (tonnes)[1]	14,775	10,648[2]	11,634[3]	tbc

2.4 Between March and June 2012, the Government initiated a consultation on the CRC, with the express aim of simplifying the scheme beyond Phase 1. The Government then took 6 months to analyse all the responses it received before publishing its response in December 2012. As a result of this consultation, a

[1] *It should be noted that the CRC does not require emission figures to be weather corrected. (2010 – 12th coldest year in the last 100 years, 2011 – second warmest year on record stretching back 353 years)*

[2] *For 2011/12 the metering methodology for the Council's street lighting was purposefully changed. This meant that emissions associated with street lighting were no longer included in the Council's CRC returns.*

[3] *Changes to the CRC reporting regime were introduced in 2012/13.The Council no longer had to report on all fuel types. The Council now only had to report 100% of its electricity and 100% of its gas consumption, where the gas meter consumed more than 73,200 kWh per annum.*

number of changes to the scheme have either been, or are in the process of being, implemented by the Government.

2.5 The biggest impact for the Council is that from the start of Phase 2 (financial year 14/15), consumption figures from state schools and academies in England are no longer the responsibility of the Local Authority.

2.6 The above, coupled with better management of the energy consumption within the Council's remaining qualifying electricity supplies, means that the Council is now outside the requirements of the CRC scheme.

2.7 Phase 2 is currently due to end in 2018/19, with the qualifying year for Phase 3 currently set at 2017/18.

2.8 Best advice is that there are likely to be further changes to the CRC scheme and reductions in the threshold criteria during this timeframe (e.g. bringing street lighting back as a qualifying supply).

2.9 This would have a significant impact on our reported consumption and there is the potential for the Council to qualify for Phase 3, beginning 2019/20.

2.10 With this in mind the EMT intend to closely monitor communication from government and continue to annually collate and internally report on its buildings energy consumption / carbon dioxide emissions.

3.0 Formal Policy

3.1 The Carbon Management Plan (2009) is soon to be replaced by the 'Energy Management Strategy' (EMS).

4.0 Energy Management Projects

4.1 The EMT apply a simple hierarchy when considering energy management projects:

- Any potential project should reduce energy use/wastage. *(Typically these types of projects should be low/no cost and include the introduction of change management techniques, cultural change initiatives and the introduction of specific policies)*

- Second, any project should improve the efficiency in the way in which energy is consumed. *(These types of projects typically include physical improvements to the fabric of a building, e.g. insulation, double glazing, lighting, but also the*

introduction of improving technology such as variable speed drives and voltage optimisation.)

- Once we have successfully carried out the first two elements we can then look at the potential to 'retrofit' renewable technologies such as Solar PV. This means adding current technologies to existing corporate estate. Any investment in technology without the first two elements would be at risk.

4.2 Project Management

4.3 There are 2 styles adopted by the EMT.

- Lead role: (2 examples below)

1. *The replacement of all non half hourly electricity meters within the Council's central energy contract with 'smart' meters.*

2. *The replacement of oil central heating systems with Biomass.*

- Advice and guidance service:

1. *A good example of this is the Education School Premises Alteration Request (SPAR) methodology. Should a school wish to undertake any building works then they are required to submit a request to Education. This request is then circulated to identified teams within the Council to ensure that the proposed works are carefully considered and implications identified. The Energy Management Team are now consulted as part of this process.)*

5.0 Project Finance

5.1 In order to support any capital project, the EMT has a capital fund used on an 'Invest to Save' basis. Any budget manager can approach them and bid for capital support, this will be assessed using a methodology designed to look at the risks associated with the pay back of the loan.

5.2 Table 2 below summarises those projects that have benefited from the carbon management 'Invest to Save' loan.

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Table 2: Use of the Council's 'Invest to Save' carbon management budget

Project	Loan Amount (£)	Predicted CO2 reduction per annum (tCO2)	Simple payback period
Variable Speed Drives (Leisure Centres)	**£16,000**	**96.21tCO^2**	**1.99 years**
Compton Primary	**£15,000**	**Not calculated**	**5 years**
Market Street Lighting	**£50,500**	**23 tCO^2**	**7 – 10 years**
Market Street Solar Film	**£33,000**	**40 tCO^2**	**5.13 years**
Market Street ICT Server Suite	**£100,000**	**111 tCO^2**	**5 years**
Mortimer Library	**£25,000**	**Not calculated**	**5 years**
Falkland Primary Solar PV	**£15,000**	**9.5 tCO^2**	**5 years**
MSCP Voltage Optimisation	**£20,000**	**47.46 tCO^2**	**2.5 years**

6.0 Renewable Energy

6.1 A number of sites have installed renewable energy.

Table 3: Implementation of Renewable Energy across Council Estate (inc Schools)

Technology type	Number of sites	Installed capacity	Carbon savings per annum[4]
Solar PV	5	53.66 kWp	25.17 tCO^2
Solar Thermal	2	13.6	16 tCO^2
Biomass	3	750 kWp	
Ground Source Heat Pumps	1	31.4kWp	5.8 tCO^2
Air Source Heat	1	8.5kWp	1.5 tCO^2

[4] *Estimated based on installed capacity. Actual savings can differ dependent on a number of factors.*

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Pumps			

6.2 Solar

6.2.1 The current market price of Solar panels is approximately £1,500 per kW peak. Using data from the Energy Savings Trust it can be calculated that a 1 kW peak system generates around 925 kWh of electricity and saves approximately 450kg (0.45 tonnes) of CO2 a year. The p/kWh that the Council currently pays in the central energy contract varies depending on a number of factors but an average figure of 9.3 p/kWh is an indicative figure.

6.2.2 Using the above information, the basic ROI for solar PV is approximately 17.4 years. This may be reduced slightly when taking into account economies of scale.

6.2.3 In order to promote and expand the renewable energy market the Government introduced the Feed in Tariff scheme. Appendix A gives more details.

6.3 Biomass

6.3.1 The focus has been to progress with schools who have oil central heating systems. A series of feasibility studies have led to a number of sites being identified as 'suitable for a biomass heating system'. Currently there is one fully operational, with more due to be delivered in the next 12mths.

6.3.2 This latest project demonstrates that a £70,000 capital investment (to procure and install the biomass heating system) the school would save approximately 42 tonnes CO2 per annum because biomass is considered carbon neutral.

6.3.3 To encourage the move towards such technologies, the Department for Energy and Climate Change (DECC) have developed an investment tool called the Renewable Heat Incentive (RHI) scheme. There are risks associated with such projects but currently the guarantee is based around approved technology and the consumption data that is submitted by the owner of technology. With the schools project, payback on the capital investment will be achieved within 7 years (based on current RHI rates).

6.4 The EMT regularly reviews the available technologies and the associated government incentives to assess the risk of any capital investment.

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7.0 Community Leadership

7.1 As well as undertaking functions that are internally focused, the EMT also currently provide support and guidance to external organisations, community groups and private individuals through the Energy Efficiency Officer (Community) (EEOC) post.

7.2 The EEOC is a member of the LSP Greener sub partnership which supports delivery of the 'greener' aims of the Sustainable Community Strategy 'breath of fresh air'. The main themes adopted by the LSP greener sub partnership, under which specific action points are included in an annual action plan, are:

- Reducing the Carbon Footprint of the District
- Increasing the use of local resources
- Increasing fuel security through local energy provision
- Reducing the environmental impact of transport in West Berkshire
- Reducing the impact of commercial waste

7.3 Historical and current activities under these themes include the Westfields 'greening campaign', 15% of the households in this area took part and calculated savings of approx 95 tonnes CO2, 300,000 litres of water and £23,000 per annum.

7.4 The EEOC is also part of the management committee of the West Berkshire Green Exchange. The 'Exchange' represents local green community groups and individuals within West Berkshire, holding 3 forums and a conference in 2013/14. The 'Exchange' is also responsible for a small budget, sourced by West Berkshire Council from the Greenham Common trust, to support local green activities such as Greening Campaigns and Swap Shops.

7.5 Liaising with the Council's Housing Team, the EEOC has also been involved in the process of the Council becoming a shareholder in 'Green Deal Together', a community interest company set up as a 'Green Deal' provider to deliver the Governments 'Green Deal' scheme. The company is currently aiming to launch in April 2014 and will be able to provide 'Green Deal' assessments to householders in West Berkshire.

8.0 Central Energy Contract

8.1 The Energy Management team took over responsibility for the Council's central energy framework contract, and its day to day management, from the Council's Procurement Team in 2010.

8.2 At that time, the framework was in the process of switching from PASA (NHS) to Buying Solutions (Government procurement organisation). Since then, Buying solutions have been renamed the Government Procurement Service and most recently the Crown Commercial Service (CCS).

8.3 By using a framework energy supply contract, the Council is ensuring that it complies with EU procurement rules and the Council also benefits from the economies of scale and control of risk that come with CCS being responsible for a large portfolio of customers and their energy requirements.

8.4 In terms of the energy supplier contracts through the framework then the Council has a 1 year rolling contract with British Gas Business (non half hourly electricity), EDF (half hourly electricity) and Corona (gas).

8.5 As part of the CCS there is a 6 month notice to quit.

8.6 The view of EMT is that the CCS process has performed well, balancing against market average costs and the reduced risk of being involved with a large number of organisations. This also reduces the day to day demands on the EMT for detailed knowledge of the energy markets and ongoing negotiations.

8.7 Whilst there is currently no formal policy that requires Council sites and schools to use the central energy contract, the vast majority are included. At the last count the central energy contract had 189 non-half hourly electricity meters, 9 half hourly electricity meters and 80 gas meters. This indicates that the vast majority of the Council's energy consumption and therefore exposure is via its non half hourly electricity consumption.

8.8 In terms of 'green' credentials then it should be noted that for 2013/14, all of the Council's electricity supply came from sustainable sources and therefore the Council was exempt from paying the Climate Change levy on any of its electricity bills.

8.9 Due to the rural nature of West Berkshire, not all of the Council's sites are connected to the mains gas network and therefore rely on fuel oil for their heating requirements. In order to provide these sites with access to the advantages of a framework agreement and national suppliers, the Energy Management Team has sourced the ESPO Liquid Fuels framework. This is essentially a 'call off' contract whereby each individual Council site enters into a supply contract with a national fuel oil supplier each time that they place an order. The contract is then fulfilled when the supply of fuel oil has been delivered.

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APPENDIX A

1.0 Subject to the type of renewable energy and size of installation, this scheme pays 'owners' a set tariff for energy generated and exported to the national grid. The Government reviews and changes these tariff levels on a prescribed 3 month cycle. However, once installed then the system is guaranteed the tariff level at the time of initial installation for a period of 20 years. This is also index linked.

For example:

A 10 kW peak system should cost approximately £15,000 to install and generate approximately 9,250 kWh per annum. Also saving approximately 4,500 kg (4.5 tonnes) per annum.

ROI is calculated as follows:

9,250 x 0.093 = £860.25[5]
9,250 x 0.1303 = £1,205.28[6]
2,775 x 0.0477 = £132.37[7]

Total annual income / savings for the installation = £2,197.90

1.1 Therefore return on investment (ROI) is approximately 6.8 years but due to expected energy price rises and index linking this maybe slightly less.

1.2 It should also be noted that for organisations intending to install solar PV on more than 25 sites then there is a special aggregation FITs tariff that is currently set at 90% of the prevailing Tariff rate.

[5] *Value of electricity consumption per annum avoided using today's energy prices.*
[6] *Value of annual FITs payment for generated electricity using current tariff levels.*
[7] *Value of annual FITs payment for electricity back into the national grid.*