

Report to: **Audit, Best Value and Community Services Scrutiny Committee**

Date: **1 June 2011**

By: **Director of Corporate Resources**

Title of report: **Carbon Management**

Purpose of report: **To provide an update on activities undertaken and planned to reduce the Council's carbon footprint from its own activities and services**

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**RECOMMENDATIONS: The Committee is recommended to:**

- 1. note progress in preparing for the Carbon Reduction Commitment Energy Saving Scheme and reduction on the carbon footprint; and**
  - 2. note work in hand to accelerate a reduction in energy consumption.**
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**1. Financial Appraisal**

1.1 Since working with the Carbon Trust as a pilot for their Carbon Management Action Plan initiative the Council has been able to access external funding through the Trust's SALIX programme. This supports the development of a self-sustaining energy efficiency fund which following successive applications to the trust and match funding currently amounts to £1,020,500. All projects supported by the fund have a maximum 5 year pay back period.

1.2 On the adopting of the Corporate Sustainable Buildings Policy in the Council has approved capital funding of £300k a year through the capital programme to reduce the carbon footprint of new buildings and improve their rating against the Building Research Establishment Environmental Appraisal Methodology (BREEAM).

1.3 Following the ability of the Council to benefit from feed-in tariffs from solar power installations, provision of £300k has been included in the capital programme for such installations.

**2. Supporting Information**

2.1 The County Council adopted a Corporate Property Energy Strategy in March 2004. Subsequently, Cabinet approved a Carbon Management Action Plan on 19 April 2005 following work carried out with the Carbon Trust. This supported a successful application to the Trust's Salix fund which has enabled creation of a self-sustaining energy conservation fund which provides loans to schools and departments which are repaid through reduced energy costs. Since 2007, £769,260 worth of energy efficiency projects have been implemented using Salix (Appendix 1).

2.2 Further funding has been made available through the Capital Programme as set out in the financial appraisal paragraphs. Projects funded by capital provision and the BREEAM rating of recent capital projects following adoption of the Corporate Sustainable Buildings Policy are set out in Appendix 2.

2.3 The Council's Climate Change Strategy aims to achieve an annual reduction of 3% in CO<sub>2</sub> emissions. National Indicator 185 has been used to measure CO<sub>2</sub> emission reduction, with a baseline year of 2008/09. NI 185 will be replaced this year with its successor which is in line with the Carbon Reduction Commitment Energy Efficiency Scheme (CRC). The new scheme requires very similar reporting to NI 185. Each Local Authority will be required to publish its own Greenhouse Gas (GHG) report locally on its web site by the end of July aligning with the CRC data submission. The reports will also have to be e-mailed to DECC for them to collate and make available.

2.4 On 1 April 2010 the Council gained the Carbon Trust Standard (CTS) for the way carbon reductions are being pro-actively managed and in 2009/10 achieved a CO2 reduction of 6.2% (67,384 tonnes in 2009/10 from the baseline of 71,874 tonnes). Figures for 10/11 are still being calculated. Our target of a 3% reduction equates to 1,650 tonnes of CO2 emissions, however we estimate that we will achieve 670 tonnes. This shortfall is mainly attributed to the severe winter, delays in the installation of Automated Meter Readings (AMR) by suppliers due to demand exceeding capacity to deliver and in work to progress SALIX projects.

2.5 In July 2011 baseline data will need to be submitted for CRC and for the National Indicator successor. In October 2011 a league table will be provided based on:

- Carbon Trust Accreditation
- Progress in installing advanced meter reading.

### **3. Recent Developments**

3.1 The priority over recent months has been to comply with and prepare for the CRCESS. Initial criteria for measuring performance are:

- Whether the organisation has obtained Carbon Trust accreditation
- Extent of installation of advanced meter reading.

3.2 Work to install AMR commenced early in 2010 and the County Council is considered to be well advanced with 618 installed (80% of meters).

3.3 The roll-out of energy saving measures through the Salix fund, which suffered during 2010/11 due to the resignation of the officer managing this and the need to recruit, induct and train his replacement is now accelerating.

3.4 Other factors which have enabled acceleration of energy-savings measures across the estate are:

(a) Development of the Carbon Hub, a web-based toolkit developed for East Sussex Schools. Following a pilot programme the Hub has now gone live and so far over 100 schools have signed up. More details are set out in Appendix 3.

(b) A review of the Energy team within CRD Property which has divorced the invoice validation/payment functions from the energy conservation function and amalgamation within CRD Property of energy conservation advice and action functions which previously were situated in both CRD and ET&E departments.

(c) Development of pilots to introduce low energy lamps in street lighting and a pilot switch-off of street lights in Heathfield. Rolling out these initiatives will impact on carbon reduction significantly as this function accounts for 18% of carbon emissions by ESCC.

(d) Development and adoption of a Sustainable ICT Action Plan.

### **4. Conclusion**

4.1 Driving down energy usage and consequently CO2 emissions is a priority in terms of climate change but also as a contributor to savings targets. The CRC will impose a "Carbon Tax" of approx £500k on ESCC so a reduction in consumption provides economic benefits both in terms of lower fuel costs and lower CRCESS tax. This will be the focus going forward.

SEAN NOLAN

Director of Corporate Resources

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#### **BACKGROUND DOCUMENTS**

Carbon Management Action Plan 2005 and Corporate Sustainable Buildings Strategy

## Salix Projects Implemented/Committed to end March 2011

Title	Status	Project Type	Technical Cost	Loan Value	Annual kWhr Units Saved	Annual GBP Savings	Annual CO2 Tonnes Saved
Hampden Park Infant Valvewrap and BMU	Commissioned	Boilers	£3,739	£4,113	69,054	£1,650	14
Whitehill BMU and valvewrap	Commissioned	Boilers	£2,828	£3,111	78,222	£1,760	16
Willingdon Primary School	Commissioned	Heating	£3,534	£3,887	77,900	£2,337	21
Highfield Lighting	Commissioned	Lighting - Upgrades	£5,881	£6,469	24,774	£1,734	13
St Phillips BMU and VW	Commissioned	Heating	£4,017	£4,419	60,267	£2,260	16
St Andrews BMU and VW	Commissioned	Boilers	£1,588	£1,747	40,117	£958	7
Polegate lighting Controls	Commissioned	Lighting - Controls	£5,711	£6,282	12,640	£1,557	7
Alfriston School BMU and VW	Commissioned	Boilers	£1,135	£1,249	12,400	£589	3
Beacon Community College Burner Management	Commissioned	Insulation - Pipework	£10,596	£11,656	278,842	£6,971	52
Oakwood BMU and valve wrap	Commissioned	Boilers	£3,391	£3,730	93,760	£2,239	17
Chailey Valve Insulation	Commissioned	Insulation - Pipework	£3,123	£3,435	59,486	£2,231	15
Sandown Pool Cover	Commissioned	Swimming	£1,890	£2,079	15,706	£668	3
Bellbrook Resource Centre Draughtproofing	Commissioned	Insulation - draught proofing	£1,127	£1,240	2,797	£345	2
Ringmer Community College Radiator Reflectors	Commissioned	Insulation - Other	£1,461	£1,607	19,091	£334	4
Chailey Burner Management Units	Commissioned	Boilers	£4,500	£4,950	112,677	£4,225	28
St Mary Star of the Sea Solar Film	Commissioned	Insulation - Building Fabric	£1,012	£1,113	2,122	£260	1
Ratton School Draught proofing	Commissioned	Insulation - draught proofing	£18,344	£20,178	223,964	£6,002	46
Westfield House Draughtproofing	Commissioned	Insulation - draught proofing	£3,193	£3,512	25,908	£842	5
Sandown pool boiler replacement	Commissioned	Boilers	£9,860	£10,846	20,568	£2,520	11
sandbanks	Commissioned	Boilers	£1,750	£1,925	42,000	£592	8
Sandbanks Valve Insulation	Commissioned	Insulation - Pipework	£1,046	£1,151	29,056	£410	5
Conquest Centre Valve Wrap	Commissioned	Insulation - Pipework	£1,438	£1,582	39,944	£563	7
St Nicholas Valve Wrap	Commissioned	Insulation - Pipework	£768	£845	17,455	£246	3
Ringmer Community College Insulation	Commissioned	Insulation - Building Fabric	£29,474	£32,421	344,473	£6,028	64
All Saints Bexhill Burner Management Unit	Commissioned	Boilers	£875	£963	25,514	£360	5
All Saints Bexhill Valve Insulation	Commissioned	Insulation - Pipework	£1,496	£1,646	37,400	£527	7
Beacon Community College Further Burner management	Commissioned	Boilers	£2,625	£2,888	45,000	£639	8
Beacon Community College Further Vavle insulation	Commissioned	Insulation - Pipework	£4,055	£4,461	112,639	£1,602	21
Whitehouse primary Valve insulation	Commissioned	Insulation - Pipework	£2,299	£2,529	45,000	£648	8
Broadoak Burner Management	Commissioned	Boilers	£895	£985	14,000	£644	4
Broadoak Valve Insulation	Commissioned	Insulation - Pipework	£634	£697	13,800	£635	4
Cuckmere House Burner Management	Commissioned	Boilers	£875	£963	21,333	£305	4
Cuckmere house Valve Insulation	Commissioned	Insulation - Pipework	£1,827	£2,010	36,909	£528	7
Bishop Bell boiler replacement	Commissioned	Boilers	£18,915	£20,807	75,300	£3,200	14
Bishop Bell pipe and valve insulation	Commissioned	Insulation - Pipework	£2,000	£2,200	24,500	£345	5
Bishop Bell point source heaters	Commissioned	Hot Water	£3,485	£3,834	20,000	£800	4
St Marys Horam Burner Management	Commissioned	Boilers	£1,750	£1,925	69,333	£998	13

St Marys Horam Valve Insulation	Commissioned	Insulation - Pipework	£2,141	£2,355	50,976	£734	9
St Nicolas Centre Draught Proofing	Commissioned	Insulation - draught proofing	£868	£955	19,947	£848	4
Glyne Gap Heat Recovery	Commissioned	Heating	£31,500	£34,651	205,000	£8,713	38
Uckfield Community College Draught Proofing	Commissioned	Insulation - draught proofing	£33,133	£36,503	272,200	£6,805	56
County Hall Server Virtualisation	Commissioned	Computers and IT	£138,539	£152,545	581,629	£71,250	316
Catsfield Primary Insulation	Commissioned	Insulation - Building Fabric	£1,673	£1,840	8,132	£691	4
Hawkes Farm Burner Management Control	Commissioned	Boilers	£1,925	£2,118	43,398	£955	8
Framfield BMU & Valvewrap	Commissioned	Boilers	£1,760	£1,935	18,370	£680	5
St Nicholas draught proofing part 2	Commissioned	Insulation - draught proofing	£600	£660	14,914	£634	3
St Marys House Lighting	Committed	Lighting - Upgrades	£22,000	£24,200	12,360	£881	7
Robertsbridge CC cavity wall insulation	Committed	Insulation - Building Fabric	£7,462	£8,208	56,895	£2,390	15
T&E Street Lighting Principal Traffic Routes	Committed	Street lighting	£77,500	£79,438	141,460	£15,561	77
T&E Street Lights NON Principal Traffic Routes	Committed	Street lighting	£64,000	£65,600	117,883	£12,967	64
County Hall Voltage Optimisation	Committed	Voltage Reduction	£54,352	£59,788	289,438	£20,261	158
St Mark's House Voltage Optimisation	Committed	Voltage Reduction	£10,705	£11,775	40,109	£2,808	22
St Mary's House Voltage Optimisation	Committed	Voltage Reduction	£13,834	£15,218	108,132	£7,569	59
Peacehaven Library Voltage Optimisation	Committed	Voltage Reduction	£7,328	£8,060	29,203	£2,044	16
Eastbourne Library Voltage Optimisation	Committed	Voltage Reduction	£7,328	£8,060	24,272	£1,699	13
Nutley CofE Primary School Loft Insulation	Committed	Insulation - Building Fabric	£1,721	£1,894	8,368	£603	5
Uplands Community College BMU and Valvewrap	Fully Paid	Building Management Systems	£6,536	£7,190	259,526	£6,021	53
Hillcrest School BMU Valve wrap	Fully Paid	Building Management Systems	£6,447	£7,092	267,328	£6,202	51
Stafford Junior BMU and valvewrap	Fully Paid	Building Management Systems	£2,542	£2,796	72,236	£1,726	14
Red Lake Community Primary BMU and ValveWrap	Fully Paid	Building Management Systems	£2,608	£2,869	113,065	£2,702	23
Sandown Primary BMU and ValveWrap	Fully Paid	Building Management Systems	£2,349	£2,584	4,689	£1,641	13
Westfield Primary BMU and ValveWrap	Fully Paid	Building Management Systems	£1,355	£1,491	35,528	£885	7
St Paul's Primary BMU and ValveWrap	Fully Paid	Building Management Systems	£3,442	£3,786	7,280	£2,548	20
Ocklynge Junior Valvewrap and BMU	Fully Paid	Boilers	£4,301	£4,731	5,920	£2,350	16
Robertsbridge Community College BMU and Valvewrap	Fully Paid	Heating	£3,418	£3,760	68,453	£2,567	18
Elphinstone BMU and VW	Fully Paid	Heating	£2,902	£3,192	132,440	£3,311	27
Dallington BMU and VW	Fully Paid	Heating	£1,186	£1,305	36,840	£921	7
St Marys Star of the Sea BMU and VW	Fully Paid	Boilers	£1,760	£1,936	51,667	£1,292	10
motcombe	Fully Paid	Boilers	£3,688	£4,057	70,560	£2,646	18
Cross in Hand BMU and VW	Fully Paid	Boilers	£4,460	£4,906	125,309	£3,133	23
Seaford Head BMU and ValveWrap	Fully Paid	Boilers	£10,508	£11,559	402,044	£9,046	74
Willingdon Lighting Controls	Fully Paid	Lighting - Controls	£5,869	£6,492	49,398	£3,967	21
Seaford Primary boiler controls	Fully Paid	Boilers	£3,846	£4,264	77,947	£3,313	14
<b>TOTAL SALIX Projects committed/implemented to Mar 11</b>			<b>£708,722</b>	<b>£769,260</b>	<b>6,066,867</b>	<b>£270,913</b>	<b>1,759</b>

**Carbon Reduction Projects Funded  
2007/08 to 2010/11**

Appendix 2

<b>Building</b>	<b>Carbon Management Project</b>	<b>£</b>	<b>Year</b>
Beeching Park, Bexhill	Solar panels and improved roof insulation	25,000	2007/08
Ringmer Sixth Form College	Ground source heat pump and solar panels	50,000	2007/08
Sandbanks, Hailsham	Lighting controls and solar collectors	20,000	2007/08
Wivelsfield Primary School	Rainwater harvesting system	30,000	2007/08
Battle & Langton	Insulation & lighting controls	15,000	2008/09
Beeching Park	Solar panels	2,251	2008/09
Bexhill HS BSF	PV cells	50,000	2008/09
Bridies Tan	Insulation and rainwater recycling	40,000	2008/09
Hawks Farm	Insulation & lighting controls	15,000	2008/09
Heathfield CC	Insulation	25,000	2008/09
Linden Court	Solar panels	40,000	2008/09
Maresfield	Insulation	2,000	2008/09
Rye Primary School	Sedum roof and insulation	50,000	2008/09
Sorrel Drive	Heating controls & insulation	30,000	2008/09
Tideway School	Lighting controls, insulation and water harvesting	42,000	2008/09
Barcombe sch	Solar/PV & air source heat pump	30,000	2009/10
Bexhill HS BSF	Biomass Boiler	200,000	2009/10
Chailey Child ctr	Air source heat pump, lighting controls and insulation	20,000	2009/10
Heathfield CC	PV cells	50,000	2009/10
High Hurstwood	Solar panels, insulation, light controls	50,000	2009/10
Hurst Green sch	Ground source heat pump, rainwater harvesting & PV	100,000	2009/10
Milton Court	Solar Panel, Heat Pump and controls	110,000	2009/10
Northiam Pre sch	Solar panels, air source heat pump and insulation	20,000	2009/10
Ringmer Child ctr	Air source heat pump, lighting controls and insulation	20,000	2009/10
Rotherfield Pre sch	Solar panels, air source heat pump and insulation	20,000	2009/10
Bonnars CEPS	Air source heat pump, Itg controls and insulation	25,000	2010/11
County Hall	Heating Zone Controls Energy Saving Element	197,106	2010/11
Cradle Hill CC & Pre Sch	Air source HP, Itg controls, solar water htg and insulation	35,000	2010/11
Framfield Pri sch & Pre sch	Air source heat pump and insulation and water controls	25,000	2010/11
Mercread Centre	PV cells windcatchers and insulation	32,143	2010/11
Motcombe Community School	Additional insulation and lighting controls	5,000	2010/11
Northiam	Solar panels, air source heat pump and insulation	10,000	2010/11
Polegate Sch	Air source heat pump, Itg controls and insulation	10,000	2010/11
Ringmer CC Childrens Centre	Air source hp, lighting controls & additional insulation	10,000	2010/11
Rotherfield Pre sch	Solar panels, air source heat pump and insulation	10,000	2010/11
Seaford Head Pool	Combined heat and power system	56,484	2010/11
St Marys House	Installation of tamper proof covers for radiators	2,900	2010/11
The Haven sch & Pre sch	Air source HP, lighting controls and insulation	35,000	2010/11
Ticehurst CC	Air source heat pump, lighting controls and insulation	60,000	2010/11

<b>Totals</b>	<b>£</b>
2007/08	125000
2008/09	311251
2009/10	620000
2010/11	513633

## BREEAM Ratings of Current Projects

Property	Officer	Rating		Financial year
Frant	Emma Davies C.3.09.056   6042	BREEAM - Excellent	Completed	2010/11
Eastbourne Academy (ETC)	Alice Smyth C.3.10.013   0864/7072	BREEAM - Excellent		2012/13
Hastings Academy East (Hillcrest)	Alice Smyth C.3.10.003   1183/7026	BREEAM - Excellent		2012/13
Hastings Academy West (Filsham)	Alice Smyth C.3.09.072   1245//6971	BREEAM - Excellent		2012/13
Diploma Exemplar Beacon CC (Crowborough)	Emma Davies C.3.10.004	BREEAM - Excellent		2011/12
Diploma Exemplar Claverham CC (Battle)	Emma Davies C.3.10.004	BREEAM - Excellent		2011/12
Diploma Exemplar Ringmer CC	Emma Davies C.3.10.004	BREEAM - Excellent		2011/12
The Keep £20m	Carol Burns C.1.07.003   6374	BREEAM - Excellent		2012/13
Churchwood (Hastings)	Tracey Watkins C.3.09.050   6873	BREEAM - Very Good	Completed	2010/11
Chyngton (Seaford)	Emma Davies C.3.09.030   1815/6864	BREEAM - Very Good	Completed	2010/11
Cradle Hill (Seaford)	Sally Huckle C.3.09.029   1827/6865	BREEAM - Very Good	Completed	2010/11
Hurst Green	Christian Williams C.3.09.049   6872	BREEAM - Very Good	Completed	2010/11
Bexhill High School	Christian Williams C.3.07.050   0221/6379	BREEAM - Very Good	Completed	2010/11
Landowne Secure Home	Christian Williams C.3.09.060   73133/6885	BREEAM - Very Good		2011/12
Bexhill Vocational Skill Centre	Christian Williams	BREEAM - Very Good	Completed	2010/11
Warwick House (inc Seaford Library)	Carol Burns C.4.10.002   4266/7063	BREEAM - Very Good		2012/13
Bonnars CE School - New Nursery	Terry Brown C.3.09.043   1517/6854	BREEAM - Good	Completed	2010/11
St Peters, Chailey - New Children's Centre	Terry Brown C.3.10.010   0714/7064	BREEAM - Good	Completed	2010/11
Cradle Hill (Seaford) - Children Centre & Nursery	Terry Brown C.3.09.087   1827/6994	BREEAM - Good	Completed	2010/11
Northiam School - Nursery	Terry Brown C.3.09.039   1596/6859	BREEAM - Good	Completed	2010/11
Ringmer CC - New Children Centre	Terry Brown C.3.09.038   1739/6855	BREEAM - Good	Completed	2010/11
Rotherfield Village Hall - New Nursery	Terry Brown C3.09.077   6976	BREEAM - Good	Completed	2010/11
The Haven CE&MPS - New Nursery	Terry Brown C.3.10.005   0835/7054	BREEAM - Good	Completed	2011/12
Ticehurst School - New Children Centre & Nursery	Terry Brown C.3.09040   1865/6852	BREEAM - Good	Completed	2010/11
Rye Library	Tracey Watkins C.1.09.005   3463/6999	BREEAM - Good	Completed	2010/11

## East Sussex Carbon Hub Project

This web-based toolkit has been developed specifically for all East Sussex schools. It has been designed help schools reduce their carbon emissions and encourage a whole school approach to resource efficiency enabling staff and pupils to:

1. understand their school's carbon footprint from energy use, waste, school travel and water consumption
2. create an action plan to reduce their carbon emissions and become more sustainable
3. see what actions others schools are taking and how they are making improvements
4. form links with other schools
5. access educational resources

### The Pilot

22 schools worked with East Sussex County Council between April 2010 and March 2011 as part of a pilot group to help develop this resource. East Sussex Youth Cabinet was also part of the pilot group.

Several versions of the site were trialled and schools using the site have been able to:

- Cut energy usage
- Reduce waste
- Transform school travel plans
- Improve resource efficiency
- Cut carbon emissions
- Save water
- Save money

The pilot schools have all made progress towards reducing their carbon emissions and have an improved awareness of how to manage and improve the resource efficiency of their buildings.

The main areas for potential savings for schools and East Sussex County Council have been in energy and waste.

There have been a number of different approaches taken by the schools. The Carbon Hub has had wide appeal and proved to be a versatile tool for headteachers, business managers, site managers, governors, teachers, pupils, parents and the East Sussex Youth Cabinet to get involved.

### Action summaries from 3 pilot schools

#### Debbie Gilbert, Headteacher Burwash Primary School

"We have used the Carbon Hub as part of our whole staff INSET training about eco schools. Staff were issued with password etc so they can explore its use. We discussed staff energy usage and what simple things we could all do to improve efficiency. An eco group has been formed and we now have eco monitors who turn off lights etc and some older pupils who come to eco meetings. My deputy has met with my site manager and showed him how to look at energy usage for the school. He has plotted out some graphs and made some comparisons using the Hub and on first results it would seem we are starting to use slightly less energy. We anticipate continuing to use the hub in this way. We have just carried out an environmental review from the Eco school work which will then go on to help us create an action plan."

**Richard Dyer, Headteacher Battle and Langton Primary School**

“We (site manager and I) have focused on the energy graphs and looked at trends and actual consumption both in and out of school time over the past 12 months. As a result we have found some interesting spikes in consumption at odd times (e.g. 2 o'clock in the morning). These obviously impact on consumption and so we are unravelling why these are happening (e.g. found a timer wrongly set!).

Also sharing data from graphs with Governors premises committee which is helping them determine their priorities for making the school more energy efficient (e.g. fitting of thermostatic controls on radiators).”

**Gill Levett, Business Manager Red Lake Primary School**

Re: financial savings as a result of the project.

“Our savings are not yet for a full financial year, but I have identified that under our old waste contract our average monthly bill was around £270.

Since we joined the contract and got going with composting, the average monthly waste bill has been £120 with the recycling at around £40 per month.

This is a saving of £110 per month, £1320 per year. What I would like to add is that the educational value of the projects should not be underestimated. The project has opened our children’s minds to the impact of human activity on their own environment and ways to change behaviour. They have been really good at changing the adult behaviour and attitudes in school - we have also made great strides in reducing our energy costs and our DEC has gone from G to E - a good result for a building of our age and size.”

The Carbon Hub launched to all schools on 21 March during Climate Week. To date 106 schools have signed up to use the site. It is free for all schools to use until September 2012.

Over the next year the plan is to work closely with about 20 schools to encourage them to use the resource to its full potential and share best practice across the county.

**Carbon Trust**

We have put in an expression of interest to be part of a new Carbon Trust initiative: Collaborative Low Carbon Schools Service. This fully funded service aims to help local authorities support their schools estate in cutting carbon emissions and energy costs. Sean Nolan has agreed to be the project sponsor.