AGENDA ITEM NO. 4

SUSTAINABLE DEVELOPMENT ADVISORY PANEL – 26TH SEPTEMBER 2013

SUBJECT: CARBON REDUCTION STRATEGY PROGRESS

REPORT BY: ACTING DEPUTY CHIEF EXECUTIVE

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1. PURPOSE OF REPORT

1.1 To outline to the Sustainable Development Advisory Panel the progress made to date through the Carbon Reduction Strategy.

2. SUMMARY

2.1 The Carbon Reduction Strategy is a ten year strategy established to reduce carbon emissions by 45% of the 07/08 emission levels.

2.2 The strategy has 4 key areas of consideration, good housekeeping principles, invest to save schemes, asset management and renewable technology.

2.3 The strategy has seen a reduction of 12.5% on buildings energy consumption to year end 12/13.

2.4 The Invest to save scheme is working effectively and has provided significant carbon and financial savings, with projected lifetime savings of £5.7 million and 38,000 thousand tonnes of carbon emission.

3. LINKS TO STRATEGY

3.1 The Carbon Reduction Strategy links directly to conserving resources.

4. THE REPORT

4.1 The authority embarked on an ambitious Carbon Reduction Strategy in May 09. The core function of the strategy is to reduce carbon emissions from key authority buildings such as offices, schools, leisure facilities et al, and street lighting. The strategy was established primarily to focus on buildings.

4.2 The Strategy aims to reduce carbon emissions by 45% over a 10 year period through until 2019 and is based on the 07/08 carbon emissions. The combined energy consumption from gas and electricity sources in 07/08 was 80,754,032kWh (or 80.7 Giggawatt hours GWh), which generated 26,035 tonnes of carbon emissions, the strategy requires a drop in carbon emissions by 11,715 tonnes.

The Strategy is broken down into 4 key criteria from which the 45% savings will be achieved:

Good Housekeeping to save 10%

4.3 Within energy management there are elements that are un-quantifiable in terms of the energy and carbon emissions that are saved. Key initiatives such as raising awareness or training are core building blocks to good energy management, which produce results that are un-measurable. Typical Good Housekeeping methods would include:

- Internal communications including; School awareness including pupils, staff, head teachers, caretakers and Governors.
- Leisure centre managers and duty officers training, with additional support training from the Carbon Trust
- Climate Week 4th March 2013. Exhibitions, posters, Intranet and tickertape messages
- More appropriate selection of equipment such as lamps.

4.4 A significant achievement under the good housekeeping initiative was the governor, caretaker and head teacher training sessions held at local schools. Presentations are given outlining the key principles of the carbon strategy, how savings can be achieved and how to identify where schools energy is consumed and why. The presentation includes a walk around energy inspection with each group, which shows where schools are typically letting themselves down with simple bad housekeeping principles. The training is considered to be very helpful by the head teachers and governors. The same training has now been rolled out to parts of social services.

4.5 Good Housekeeping skills are easily lost. People become complacent, new staff arrive who don't maintain such high standards etc. This will remain a challenge for the authority, to ensure people are proactive to good energy management principles.

Invest To Save to save 20%

4.6 The main contributing influence under Invest to Save is the Local Authority Energy Financing scheme. This is a £700,000 interest free invest to save scheme where the Carbon Trust/SALIX Finance contributed £200,000 and the authority contributed £500,000. This LAEF scheme has been in operation since Sept 2004 and has resulted in a significant number of energy saving projects being undertaken before the start of the strategy. Projects prior to May 09 are not counted in the strategy.

4.7 Between Sept 04 and Aug 13, there have been a total of 240 LAEF projects undertaken which has resulted in 9.6GWh, 2,408 tonnes of carbon and £385k saved. The lifetime savings are 38,004 tonnes, 143GWh and £5.7 million.

4.8 In 13/14 the LAEF scheme has invested £84,691 from a target of £90,013. Projects identified for the remainder of the year include:

- PowerPerfector at Ty Penallta £72k and approved for installation
- Trinity Fields lighting approved by the board of governors at £52k
- Ty Clyd HFE oil to gas boiler conversion est £100k
- Boiler controls at further HFE at £12k

4.9 There are approximately 150 large organisations included in the Salix scheme, including local authorities, universities, colleges and NHS trusts. As a comparator of performance Caerphilly was 4th in the league table of annual carbon savings in May 2011 the second best achieving local authority behind Bristol Council.

#	Client	Age	Total Fund	Loan Amount Commission	Annual CO2 Savings (tCO_2)	Annual financial Savings
1	University of Manchester	26	£1,390,900	£1,437,899	3,042	£614,164
2	Bristol City Council	79	£1,000,000	£1,413,206	2,868	£421,470
3	University of St Andrews	50	£1,571,250	£1,285,698	2,043	£346,011
4	Caerphilly County Borough Council	79	£800,000	£792,526	2,017	£275,215
5	University of Leicester	26	£1,000,000	£623,073	1,925	£254,778
6	London Fire & Emergency Planning Authorit	46	£900,000	£1,014,127	1,464	£234,428
7	Guildford Borough Council	62	£240,000	£239,091	1,433	£271,858
8	Kings College London	51	£250,000	£415,202	1,392	£186,426
9	Gloucestershire County Council	27	£1,000,000	£778,572	1,378	£276,771
10	Buckinghamshire County Council	25	£2,299,998	£1,050,787	1,362	£228,667
11	Northamptonshire County Council	81	£600,000	£635,509	1,346	£174,914
12	East Sussex County Council	48	£1,020,500	£487,020	1,328	£204,753
13	Croydon Council	72	£390,000	£627,882	1,254	£179,456
14	Metropolitan Police Authority	44	£600,000	£625,957	1,203	£234,992
15	Nottingham Trent University	26	£1,062,500	£650,545	1,201	£176,132

4.10 There remains ample opportunity to invest in energy efficiency technologies. CCBC needs to upgrade to more energy efficient lighting and controls as one of the key objectives as a significant proportion of carbon emissions arise from this element of electrical consumption.

Asset management to save 10%

4.11 There has been a trend to utilise buildings as much as possible which has resulted in for example schools leasing out halls for community use, this is to be applauded but the outcome is that the schools carbon emissions increase.

4.12 CCBC has an Asset Management Strategy, which by its nature will assist in the reduction of energy consumption through the proper use of buildings.

Renewable Technology to save 5%

4.13 There have been 9 installations to date of photovoltaic panels on schools, which don't attract Feed In Tariff (FIT's) and for the 7 additional properties which do receive FITS the financial returns have been £68k and 250,773kWh which has offset grid electricity and has saved 135 tonnes of carbon. The FIT returns will continue for the next 19 years.

4.14 There is no budget for new renewable technologies.

Where we are

4.15 When the baseline year was established the authority was still utilising Ystrad Fawr offices plus others. The energy consumption created by Ty Penallta Offices and Tredomen Data centre, which replaced some of the older buildings could not have been for seen. Ty Penallta is the highest energy consuming building within the authority. Tredomen Data centre is the second highest. These buildings added approximately 3GWh per annum onto the electricity load and combined with the weather corrected gas consumption the baseline figure should have registered in the region of 85.9 GWh. The reported strategy baseline was 80.7GWH, which was not weather corrected, neither was it standardised on the carbon emission factor.

To reflect this the calculations in the tables below has incorporated an adjustment for this increase.

4.16 It is the level of gas and electricity consumption (kWh) that is key to the strategy and it is the information that is gathered through the billed electricity and gas meters which is used to establish the carbon emission levels. Each year the national carbon conversion factors change. For our evaluation we use a constant carbon conversion factor.

4.17 Equally significant is the impact weather has on energy usage. To underline this, the table below shows unadjusted carbon emissions using variable emission conversion factors on the original baseline data format:

Carbon (Tonnes)			
07~08	12~13	Saved	% saved
26,035	27,042	-1007	-3.9

This would indicate that the energy consumption for the authority has increased.

By removing the impact weather has on energy consumption, the carbon improvements made by the authority become much clearer. The table below has a standardised emission factor applied, is weather corrected and incorporates Ty Penallta and Tredomen Data centre.

Carbon (Tonnes)			
07~08	12~13	Saved	% saved
18,388	16,089	2,299	12.5

This shows that at the end of 12/13 the authority has achieved a 12.5 % reduction in carbon emission. However the figure above excludes street lighting and focuses directly on buildings.

When street lighting is added the percentage saving drops:

Carbon (Tonnes)			
07~08	12~13	Saved	% saved
24,238	21,873	2,365	9.8

The data behind the tables show energy consumption has fallen from 85.9 GWh to 72 GWh in 2012/13.

4.18 The weather correction, which has taken place, is applied to heating. It is much more difficult applying weather correction to electricity loads such as street lighting and office lighting. Also knowing what proportion of a buildings electrical consumption is used on heating systems etc.

4.19 Consideration must be given to authority wide initiatives or developments, which can have a detrimental impact on carbon emissions. Ty Penallta is an example and the roll out of electric kitchens in schools is another.

5. EQUALITIES IMPLICATIONS

5.1 The report is for information purposes, there are no equalities implications.

6. FINANCIAL IMPLICATIONS

6.1 There are no financial implications, other than the savings created by energy conservation.

7. PERSONNEL IMPLICATIONS

7.1 There are no personnel implications.

8. CONSULTATIONS

8.1 N/A.

9. RECOMMENDATIONS

9.1 To note the content of the report and the progress made to date.

10. REASONS FOR THE RECOMMENDATIONS

10.1 To maintain progress within the strategy.

11. STATUTORY POWER

11.1 N/A.

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