



REGENERATION AND ENVIRONMENT SCRUTINY COMMITTEE – 4TH JULY 2017

**SUBJECT: WELLBEING OBJECTIVE: CARBON MANAGEMENT - REDUCE OUR
CARBON FOOTPRINT - ANNUAL REPORT - YEAR END 2016/17**

REPORT BY: CORPORATE DIRECTOR - COMMUNITIES

1. PURPOSE OF REPORT

- 1.1 The Local Government Measure 2009 requires all local authorities in Wales to set and publish a set of Objectives. The Wales Audit Office (WAO) will use these Improvement Objectives to evaluate the council's likelihood of improvement and following that, the level of actual improvement that is achieved for the citizens of Caerphilly.
- 1.2 At the beginning of 2016/17, it was recommended that progress of the Wellbeing Objective: **Carbon Management: Reducing our carbon footprint** would be reported to this committee for regular performance monitoring.
- 1.3 This written report summarises the performance to year end 2016/17. The Ffynnon report provides supporting data. See Appendix 1.

2. SUMMARY

- 2.1 In Line with the Carbon Reduction Strategy (2009) this Wellbeing Objective focuses on four priorities to reduce emissions:
 - Good Housekeeping (strategy target 10% reduction)
 - Invest to Save (strategy target 20% reduction)
 - Design and Asset Management (strategy target 10% reduction)
 - Renewable technology (strategy target 5% reduction)
- 2.2 The actions outlined in this covering report provide a snapshot of what progress has been made during the year 2016/17. Some actions have had resources redirected to boost the weaker areas such as advice on Water Conservation.
- 2.3 Good Housekeeping: Improvements have been made in awareness of water Conservation and this has resulted in costs savings and rebates in excess of £18k. We advise daily on good energy and water conservation practice. Awareness raising activities are proving beneficial and are gratefully received by the recipients such as head teachers.
- 2.4 Invest to Save: The authority has installed technology that has resulted in carbon and cost reduction, see 4.14 below. We have implemented projects that have reduced annual carbon figures by circa 125 tonnes.

- 2.5 Asset Management: Three energy inefficient comprehensive schools and two primary schools are being replaced with more efficient schools, and guidance is provided to building managers to improve efficiency of buildings.
- 2.6 Renewable technology: At the start of the reporting period no funding was available for renewables. By the end of the period funding had been approved for photovoltaic panels to be installed at Newbridge and Caerphilly leisure centres and Tir Y Berth depot.
- 2.7 Implementation, delivery and impact of the objective priorities for 2016/17 are deemed to be **partially successful**.

3. LINKS TO STRATEGY

- 3.1 The local Government Measure 2009 requires each authority to publish priorities (objectives) for improvement.
- 3.2 CCBC - Carbon Reduction Strategy 2009.
- 3.3 The Well-being of Future Generations (Wales) Act 2015 is a new approach to ensure Public Services Boards and Public Bodies to think more about the long term, work better with people, communities, and each other, in meeting the seven national well-being goals ushered in by the legislation. This Well being Objective helps to maximise our contribution towards:-
- A prosperous Wales
 - A resilient Wales
 - A healthier Wales
 - A more equal Wales
 - A Wales of cohesive communities
 - A globally responsible Wales.

4. BACKGROUND

- 4.1 This Wellbeing Objective provides opportunities to:
- Drive down carbon emissions and improve water conservation in our non domestic buildings
 - Drive down utility service costs and carbon tax, whilst also protecting against future utility price increases
 - Improve working/teaching environments e.g. improve lighting levels or reduce overheating
 - Help maintain legislative requirements
- 4.2 Public awareness of climate change and the link to carbon footprint is high and Caerphilly County Borough citizens expect the Authority to take reasonable steps to reduce the energy consumed by its buildings.
- 4.3 Caerphilly CBC along with all other organisations is under increasing pressure from UK wide legislation aimed at improving energy efficiency e.g. Provision of Display Energy Certificates, Energy Performance Certificates and compliance with the Carbon Reduction Commitment scheme (which is an outright carbon tax, bearing costs to the authority).
- 4.4 To assist in reducing carbon emissions and costs, the authority has a 45% Carbon Reduction Strategy in place and has more recently developed this carbon management Wellbeing Objective. The theme of the objective mirrors the strategy within the following headings as below:

Good Housekeeping

- 4.5 Good Housekeeping is about doing the simple things right across all of our buildings. We have educated children on general energy efficiency activities that they can undertake in their schools. We have also targeted head teachers and caretakers for training activities. Awareness in schools has been raised and the training provided was received well by the participants.
- 4.6 We have logged 37 activities where information was distributed to raise awareness on water or energy conservation to staff and school pupils. Guidance on water leak detection, for example, has assisted in resolving leaks quickly and preventing Welsh Water issuing penalties.
- 4.7 We have engaged the wider Authority staff through various media formats. The Welsh Water awareness stand located in the public area of Ty Penallta reception also assisted with awareness with members of the public. They were able to book a water conservation audit for their home which also came with water efficient product upgrades such as shower heads.
- 4.8 Through the various actions outlined we are clearly seeing a positive improvement in raising awareness and training activity noticeably in schools.
- 4.9 We can prove that certain activities undertaken have resulted in physical energy, water, carbon and cost savings and that we have empowered our staff to implement energy and water savings themselves. These savings will continue to be enjoyed.
- 4.10 We have improved on the dissemination of advice issued for water conservation.
- 4.11 The activities highlighted above must continue in the future to prevent bad habits from resurfacing and leading to increases in consumption levels. Activities taken under Good Housekeeping are often difficult to quantify in terms of energy and carbon savings but the assumption is that staff that are better informed will make better judgements and make improvements on energy and water conservation where possible.
- 4.12 The scorecard attached outlines in greater detail the activities undertaken and progress resulting from them. See Appendix Scorecard WO4-Carbon Management- Reduce our Carbon Footprint

Invest To Save

- 4.13 Investing to Save in energy efficiency technologies can result in rapid carbon and cost improvements that can have lasting benefits. It can also assist in improving working and teaching environments.
- 4.14 The Salix Ltd invest to save scheme has delivered nine efficiency projects and the target spend was exceeded. The largest is the upgrade to energy efficient light emitting diode lighting at the Ty Penallta offices. This upgrade will reduce electricity costs by £16k and carbon emissions by 65 tonnes, year on year.

This table is a summary of the Investment projects delivered in 16/17:

Property and Project	Cost of Project	Payback Years	Carbon Tonnes
St Cenydd Comprehensive CRT Monitors	£1,608	7	1.5
St Gwladys primary - BEMS	£5,223	8	5
Newbridge Pool - LED Lighting	£32,247	6	25
Plas Y Felin Primary – LED Lighting	£2,937	6	4
Caerphilly LC – Hall Lighting	£12,764	8	9
TY Penallta - LED Lighting (Phase 1)	£117,701	7	65
Pengam Primary School – Led Lighting	£12,744	9	6
St Martins Phase 1 – LED Lighting	£4,032	7	2
St Martins Phase 2 – LED Lighting	£10,007	5	7

(Note these are annual carbon savings)

- 4.15 We have identified in 2016/17 invest to save projects that will roll into 2017/18. We may not have enough funding to facilitate all of the energy efficiency projects that we have identified. A priority for 2017/18 must be converting Ty Penallta office lighting to a more efficient format and improving controls and this work is well underway
- 4.16 The scorecard attached outlines in greater detail the activities undertaken and progress resulting from them. See Appendix Scorecard WO4-Carbon Management - Reduce our Carbon Footprint
- 4.17 By implementing carbon management and delivering projects we are also improving the working and teaching environments within our buildings and proving our environmental aims are being delivered upon.

Design and Asset Management

- 4.18 The authority has already closed a major corporate office. Three aging comprehensive schools will close and be replaced with a new energy efficient high school at Oakdale and similarly two primary schools are being replaced with one new efficient school in December 2017.

We are raising awareness through reporting energy performance in the annual State Of The Estate Report.

- 4.19 When providing training to schools it highlights the potential for energy savings in relation to rooms used for community activities, specifically, utilising space that does not require the whole school to be heated (from central boiler plant) or lit.

Renewable Technology

- 4.20 There is no specific budget for installation of renewable energy technologies.
- 4.21 Costed photovoltaic (PV) schemes on seven buildings and two ground mounted systems were provided to Finance for evaluation in 2016/17 all of which had a payback rate of 8 years or less.
- 4.22 Funding was approved for schemes at Newbridge Leisure Centre, Risca Leisure Centre and Tir Y Berth Depot. Installation will take place in 2017/18 period. Actual scheme sizes, installation costs, energy outputs and financial savings are yet to be established.
- 4.23 In addition to the 2016/17 Wellbeing Objective priorities (focus) as outlined in this report, an additional feasibility report was prepared for the Corporate Management Team (CMT) and Cabinet (15th February 2017) to consider further carbon reduction initiatives leading into 2017/18, this was 'To seek Cabinet approval for capital budget allocations to increase the provision of solar panels at schools (£100k – 20 sites) and to pilot the use of electric vehicles for Council business (£4k – charging points)', which was fully approved.
- 4.24 Although renewables don't encourage people to reduce their consumption level, they do bring carbon and financial savings.

5. WELL-BEING OF FUTURE GENERATIONS

- 5.1 Caerphilly County Borough Council (CCBC) has an annual carbon emission in excess of 26,000 tonnes which is a relatively large carbon footprint. We have an obligation to take steps to reduce and minimise our carbon emissions and strongly consider the associated negative impact on our environment. This objective has been set within the sustainable development principles as long term and our carbon reduction actions extend to 2,050 with some 'invest to save' schemes having a payback under 10 years but a technology lifespan of up to 30 years.

We are taking an integrated and collaborative approach by sharing knowledge and good practice and carrying out a wide range of training and awareness so that people know how to best use the technologies and practices available to the best effect.

We rely on and involve all employees, pupils and residents to contribute to the goal of carbon reduction as they directly influence the levels of carbon emitted within the borough. We also work carbon management advisory organisations, utility suppliers and Resource Efficient Wales (who replaced the Carbon Trust).

All our proposals for improvement have to be justified and validated and show we understand the causes in order to access funds not just to prevent but to improve carbon emissions levels.

- 5.2 Renewable energy initiatives contribute to the Well-being Goals as set out in Links to Strategy above and contribute to a number of the Council's objectives. In particular they contribute to a Globally Responsible Wales reducing the activities that promote climate change. Similarly they support a resilient Wales and offer an alternative to fossil or nuclear based energy options thus contributing to a more balanced energy mix and ensuring security of energy supplies. Renewable energy schemes reduce or remove emissions to air arising from carbon based energy or nuclear sources and therefore promotes a Healthier Wales. They can also support a Prosperous Wales by reducing the financial cost of energy and longer term offer opportunities for employment through the growth of the renewable energy sector within the county borough.
- 5.3 Energy conservation schemes are consistent with the five ways of working as defined within the sustainable development principle in the Act. They can be long term measures capable of reducing energy consumption that will assist future generations. Projects under consideration will support the development of an infrastructure which will prevent the on-going reliance on carbon based fuels in the future and facilitate the growth of the renewable energy industry.

6. EQUALITIES IMPLICATIONS

- 6.1 There are no equalities implications to this report that have not been considered or would adversely affect any individual or group who fall under one of the protected characteristics or wider issues as shown in the Council's Strategic Equality Plan.

7. FINANCIAL IMPLICATIONS

- 7.1 There are no financial implications other than to note that for each unit of energy conserved, gas or electricity, there are direct financial savings recorded on the utility bills and annually on the carbon tax bill.

8. PERSONNEL IMPLICATIONS

- 8.1 There are no personnel implications from this report.

9. CONSULTATIONS

- 9.1 The result of all consultations has been incorporated into this report.

10. RECOMMENDATIONS

- 10.1 The Scrutiny Committee consider the content of this report and its Appendix, and note the progress made in meeting the actions set out in this well-Being Objective.

10.2 The Committee discuss and reach agreement on the officer judgement of 'partially successful' for this objective at this time.

11. REASONS FOR THE RECOMMENDATIONS

11.1 That the Council undertakes effective scrutiny for setting and monitoring of performance improvement.

11.2 To inform members of progress made in meeting the objective and the impact on our organisation and staff.

12. STATUTORY POWER

12.1 Local Government Measure 2009.

Author: Paul Rossiter, Energy & Water Officer,
Email: rossip@caerphilly.gov.uk Tel: 01495 235535

Consultees: Christina HARRY, Corporate Director Communities
Mark Williams, Head of Property Services
Cllr Barbara Jones, Deputy Leader and Cabinet Member for Finance, Performance and Governance
Cllr Sean Morgan, Deputy Leader and Cabinet Member for Economy, Infrastructure, Sustainability and Wellbeing of Future Generations
Cllr Colin Gordon, Cabinet Member for Corporate Services
Nicole Scammell, Acting Director of Corporate Services & S151
Robert Hartshorn, Head of Public Protection
Kathryn Peters, Corporate Policy Manager
Anwen Rees, Senior Policy Officer – Equalities and Welsh Language
Ros Roberts, Performance Manager
Ian Raymond, Performance Officer
Paul Cooke , Senior Policy Officer

Appendices:

Appendix 1 Carbon Management: Reduce our carbon footprint (scorecard)

2016/17 Wellbeing Objective

WO4 - Carbon Management: Reduce our carbon footprint

APPENDIX 1

Outcomes

Our objective is to take steps to reduce the Council's carbon footprint and inform and assist others within the Borough to do the same.

The overall objective is to reduce the Council's carbon footprint of 26,035 tonnes by 45% by 2019.

Why have we chosen this?

Our climate is undergoing dramatic changes as the direct result of greenhouse gas (GHG) emissions from human activity. Carbon dioxide (CO₂) is the most significant and prevalent GHG emitted mostly from the burning of fossil fuels like coal, oil and natural gas.

The UK Government has committed to take action and has introduced the Climate Change Act with a target to cut carbon emissions by at least 80% by 2050, with a minimum reduction of 26% by 2020 across the UK.

CCBC is a large organisation and as such has a large carbon footprint. We have an obligation to take steps to minimise our carbon footprint and the associated negative impact on the environment.



A greener place to live, work and visit
Man gwyrddach i fyw, gweithio ac ymweld



2016/17 Wellbeing Objective

WO4 - Carbon Management: Reduce our carbon footprint



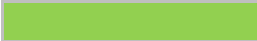
For the year 2016/17 the overall level of progress to date on this objective is deemed to be **partially successful**.

There has generally been steady progress made across most of the actions and elements of this objective.

Some actions we feel have been strengthened considerably whilst some have been sacrificed to boost those weaker areas.




Main achievements have been a strong year in invest to save projects. A good improvement in water advice and in general energy awareness activities.

The following pages will give more of an insight into what has happened in 2016/17.




Key: The following Action RAG status, shows delivery to date as	
	Un-successful
	Partly successful
	Fully successful

WO4 - Carbon Management: Reduce our carbon footprint



Actions - Good Housekeeping

Title	Comment	RAG	Overall Status	% Complete
1. Carbon Reduction Commitment (CRC) Training	We held a Carbon Reduction Commitment (CRC) training event (June 2016) that was attended by seven head teachers: Trinant, Penllwyn, Pontllanfraith, Cwmfelinfach, Ynysddu, Bryn, and Rhiw Syr Dafydd Primary Schools. The standard CRC training pack was used which covers the main elements that are good housekeeping, invest to save, asset management and renewable technology. The training identified how head teachers can reduce cost and carbon emissions by e.g. highlighting the importance of heating and lighting to smaller sections of buildings for example evening classes, rather than heating and lighting whole buildings for small groups of occupants. Training was held at Pontllanfraith Comprehensive school in June. All main elements of energy conservation were discussed. Head teachers left better informed on how to implement change. Additional training did not occur due to a redirection of resources into Invest to save schemes and other service priorities.		Partially Completed	25
2. General awareness raising through various media formats	Over thirty separate events took place where information was disseminated through training or Intranet messages, an example being notifying staff of Welsh Water visiting Ty Penallta which has a far reaching impact. The message was displayed for a week and highlighted how staff can reduce water consumption. We provided guidance and advice to various staff across the authority, from how to read meters correctly to how to check and confirm underground water leaks. We provided Social Services with seventeen year on year consumption and costs reports for all their buildings so that they can monitor consumption. We informed Trinity Fields school of a technology called Fuel Cells, which converts gas to electricity without any combustion of the gas, which would provide financial and carbon benefits for the school. We developed and issued a guidance note that enables building managers to check for water leaks. We issued a guidance note for Christmas closedown regarding boiler timings and settings to all 90+ schools. New electricity contracts due in 2017 are subject to a change in tariffs, surrounding what the industry terms Supply Capacity, circa 20 properties affected, building managers were notified due to the impact on budgets.		Partially Completed	90
3. Training key staff eg caretakers on building energy management systems	We have provided the leisure centre managers and two team leaders a template showing how to develop and utilise an 'Energy Performance Matrix' aimed at driving progressive improvements in energy and water conservation across all leisure centres. Targeting for example electricity, gas and water consumption, training, awareness, invest to save and good housekeeping. Each of these headings should have 5 clear targets in each category, the wording of which was left for managers to finalise in accordance with each leisure centre. The matrix will be used as a way of making continual progress under the Quest Quality Standard. Benchmarking was also discussed as a way of staff monitoring progress and highlighting areas that require additional work. Penllwyn, Trinant, Ysgol Gymraeg Cwm Gwyddon Primaries and Blackwood Miners, Risca Family Centre and Islwyn Indoor Bowls were provided with Building Energy Management Systems (BEMS) training to 12 people. Greenhill Primary Ysgol Cwm Derwen Ysgol Ifor Bach was given advice on heating operation due to the absence of their caretakers. We developed and provided a water guidance note for leak detection as a number of properties reported water leaks e.g St Martins Comprehensive. Guidance issued to all schools on invoices issued pre 2014, surrounding the British Gas PLC supplier transfer to EDF in 2017, this assisted in preventing duplicate payments. All sites have been reminded to regularly read their meters, submit reading to ensure accuracy of invoices. All British Gas PLC electricity supplied sites have had their electricity billing reviewed in the last 12 months for accuracy and to facilitate supplier transfer to EDF in 2017. See also comments action 5. Guidance and advice on meter readings for pavilions was issued as a form of training as some meter reads were incorrectly taken and reported.		Partially Completed	90

WO4 - Carbon Management: Reduce our carbon footprint**Actions - Good Housekeeping**




Title	Comment	RAG	Overall Status	% Complete
4. Re-issue benchmark information to building managers	It was not possible to generate the benchmark information at this point in time, as a significant proportion of data was missing due to the long standing British Gas billing PLC issues. As at end of year 2016/17 the information was still not available to allow this activity to take place. Ad hoc benchmark information has been released where the data was available through fifteen energy audits and where they were specifically requested by building managers.		Not Met	12
5. Raise awareness on the importance of reducing energy consumption through workshops, events and training with staff and pupils in our schools	Smart meter training was provided to the caretaker at Ysgol Ifor Bach Primary school in May• Bedwas High school (head teacher) was informed of the implications of catering installing electrical catering equipment, which has a negative impact on cost and carbon for the school. • School pupil training was provided at YG Bro Altta on energy conservation to the whole school during assembly. • School pupil training was provided at Derwendeg primary on energy conservation during assembly to Key Stage 2 pupils. • In total eight individual training sessions were held at schools, promoting energy savings in schools through the prescribed PowerPoint presentation to pupils and staff. Cwmaber Infants were advised on how to reduce their carbon tax burden through reducing consumption at source. Plasyfelin Primary was provided with energy and cost data to assist with their understanding. All schools had their energy accruals calculated for budgeting purposes to lead them into 2017/18.		Partially Completed	90
6. Send monthly energy fact email to schools and Headteachers	Pre-Christmas closedown of schools message: Can you please ensure that your controls are set correctly before you break for the Christmas holiday. Your main focus should be on your heating controls to ensure your buildings are not being heated as normal. You should also consider your time controls to dedicated hot water heaters and time controls for external lighting etc. This message was sent with a visual aid showing an example of energy consumption savings over a possible closedown period. All schools were notified of energy supplier transfer in January with advice on taking meter readings. On the same email advice was provided on heating controls. Advice on invest to save project was scheduled for March but due to timing issues, (school holidays and joint release on intranet) the email was not issued until the start of May 2017.		Partially Completed	17

WO4 - Carbon Management: Reduce our carbon footprint**Actions - Good Housekeeping**



Title	Comment	RAG	Overall Status	% Complete
7. Arrange for Welsh Water to man their water awareness stall in reception of Ty Penallta office. Practical demos, technology, consumption and costs	This event took place and was very successful. Welsh Water had a stall in reception of TY Penallta all day and was available for CCBC staff and member of the public. Welsh Water was happy with the volume of people that attended the stall and are happy to return at a later date. Information was provided throughout the day and staff and residents are now better informed on how to conserve water and save on billed costs. Free home water audits took place after the event for residents of Caerphilly. See accompanying note at the end of this Fynnon report. Advice issued included E.g. report dripping taps, don't overfill kettles etc. Welsh water provided fifty free water audits to residents of Caerphilly and water conservation equipment was installed by Welsh Water free of charge as part of the audit e.g. flow reducing showerheads, tap aerator kits, hose trigger gun, save a flush device for toilets.		Complete	100
8. Issue 4 messages on the intranet focusing on water conservation practices	One message to date has been issued in relation to the Welsh Water stand, it was displayed for a week to CCBC staff. There was also a live link to Welsh Waters website where additional information is available for water conservation. See last page of dashboard report.		Partially Completed	25

WO4 - Carbon Management: Reduce our carbon footprint


Actions - Invest to Save

Title	Comment	RAG	Overall Status	% Complete
1. Consider various lighting upgrades for Primary Schools	Lighting upgrades have been considered for ten primary schools. We installed lighting at: • Pengam Primary school Cost £11,247 Carbon 6tns/yr Payback 8 yrs• Plas Y felin Primary Cost £2,937 Carbon 3tns/yr Payback 4 yrs•St Martins Phase 1 Cost £4,032 Carbon 2 tns/ Payback 7 yrs•St Martins Phase 2 Cost £10,007 Carbon 7 tns/yr Payback 5 yrs Deri primary did not have a valid payback rate on lighting. • Trinant Primary School Cost £17,882 Carbon 12 tns/yr Payback 7 yrs. we are waiting to waiting to go to tender on this project. Lighting quotes were obtained on all of the ten sites		Complete	100
2. Consider various building energy management systems	Building Energy Management Systems (BEMS) has been considered for Tredomen Gateway building and Tredomen Business and Technology Centre, both are currently under review. A BEMS system is going to be installed at St Gwladys Primary school at a cost of £5,223 with Payback over 8yrs and a Carbon Saving 5tns/yr. Libanus primary is under review.		Partially Completed	75
3. There is opportunity to replace existing street lighting lamps (90 watts) with high efficiency LED's (19 watts) units	Caerphilly Council has successfully reduced carbon emissions, light pollution and budget's by introducing energy saving measures to street lighting. Since 2009 a significant proportion of street lights across the county have been subject to energy saving measures including inter-urban part-night lighting, low energy alternatives and dimming where possible. A capital Investment fund of £980k was made available in 2015-16 which saw the replacement of a third of the council's life-expired conventional sodium lights with much more energy efficient LED retro fit gear-trays, which has resulted in a whole year, saving of £290k. The 15 month installation period has allowed the authority to assess the figures of the energy reduction, environmental savings, financial savings, material savings, maintenance costs, and light pollution figures all of which have seen a significant reduction. Maintenance costs have reduced as the new LED lighting units have life span of between 10 and 15 years which is significantly longer than the conventional sodium lighting which only lasted 3 to 4 years. Use of the more modern technology means that the lighting head design is more effectively profiled to resist severe weather conditions, is composed of more resilient materials and lighter in weight (reducing the loading risk), therefore presents a more sustainable unit due to the reduced use of heavy metal elements and noble gases, when compared to conventional types. LEDs provide substantially more value for money than their sodium predecessors. This also equates to a reduction in the amount of energy required to create and operate each light. Together with the reduction in energy usage, the better control of unwanted light into the night time environment provides a positive benefit and assists in contributing to National Government targets. Cabinet Member for Highways, Transportation & Engineering, Cllr. Tom Williams commented, "Changing the lighting has had significant benefits to the environment and we will continue to look at ways to reduce costs and create a greener and more sustainable environment for residents. The management and upkeep of street lighting is an on-going cyclical and phased function, but for the purpose of the specific priorities that were to be addressed against this action during this year, we consider this have been completed.		Complete	100



WO4 - Carbon Management: Reduce our carbon footprint**Actions - Invest to Save**

Title	Comment	RAG	Overall Status	% Complete
4. Other technologies being considered include, insulation, voltage correction and controls	Tredomen Data Centre is the highest energy user kWh/m2 across the authority. The high energy consumption is down to air cooling resulting in an annual bill of circa £187k. A Resource Efficient Wales study has confirmed CCBC views that by implementing better Air Flow Management, Cold Aisle Containment and utilising free cooling, the authority could save £48k per year on the annual bill. The investment will cost £220k, payback in less than five years and provide annual carbon savings of 221 tonnes per year. Funding was sought from Finance/Cabinet/CMT. A more in-depth feasibility study was scheduled but has now been postponed whilst future building plans are being evaluated. All LAEF schemes installed in 16/17:• St Cenydd Comprehensive CRT Monitor - Cost £1,608, Payback 7 years, Carbon saved 1.5tns • St Gwladys primary – BEMS - Cost £5,223, Payback 8.6 years, Carbon saved 5tns• Newbridge Pool - LED Lighting - Cost £32,247, Payback 5.5 years, Carbon saved 25tns• Plas Y Felin Primary – LED Lighting - Cost £2,937, Payback 6.2 years, Carbon saved 4tns • Caerphilly LC – Hall Lighting - Cost £12,764, Payback 7.7 years, Carbon saved 9tns• TY Penallta - LED Lighting (Phase 1) - Cost £117,701, Payback 7.2 years, Carbon saved 65tns• Pengam Primary School – Led Lighting - Cost £12,744 , Payback 8.9 years, Carbon saved 6tns• St Martins Phase 1 – LED Lighting - Cost £4,032, Payback 6.7 years, Carbon saved 2tns• St Martins Phase 2 – LED Lighting - Cost £10,007, Payback 5.4 years, Carbon saved 7tns Lighting installed is Light Emitting Diode (LED) options which is the most carbon and cost friendly formats available. Viable projects considered but not undertaken include Lewis Girls Cost £86k, Carbon 59tns/yr Payback 8 yrs and St Cenydd Comprehensive School Cost £31k, Carbon 34tns/yr Payback 4 yrs.		Complete	100
5. Promote the understanding and the benefits of water conservation	•Rhymney Day Centre site survey, raising awareness on water consumption and general advice for conservation. • Senghenydd Youth and Llanbradach Community centre, provision of general water metering advice• Hendre Park leak detected and water rebate arranged. Advice and assistance provided to the following properties in order to recover water bill rebates on leaks: Pontlottyn Primary £4,558TY Penallta £2,300 Trigfan social services office £70Lewis Girls Comprehensive £9,246Ty Pontllanfraith £400 Brondeg day centre £1,85015 Energy audits generated had a dedicated section on water conservation.Welsh Water manned a stall within Ty Penallta to promote water conservation and this was advertised along with water conservation guidance on the intranet.		Complete	100


WO4 - Carbon Management: Reduce our carbon footprint**Actions - Invest to Save**

Title	Comment	RAG	Overall Status	% Complete
6. Raise awareness on water conservation at 20 buildings by undertaking water audit. Issue findings to managers. defective fittings, cisterns, controls and indicate costs to remedy findings	15 Energy and Water Audits were completed. Including TYB depot and Senghenydd Youth Centre. Off the back of these audits, we were able to advise TYB facilities to not install a second water supply to site and advise better controls on the vehicle wash to minimise the impact of water pressure drop to one of their buildings. Water savings advice has been issued separately to the energy audits on the intranet, via individual emails to building managers and via the leak guidance note. On site advice has also been provided on leaks such as St Martins Comprehensive school.		Partially Completed	75

Actions - Asset Management

Title	Comment	RAG	Overall Status	% Complete
1. There are likely to be numerous properties considered for sale or disposal which may bring some carbon savings	CCBC has already closed a major office. There are plans to close three aging comprehensive schools and replace with one new energy efficient high school and similarly we have two primary schools being replaced with one new efficient school in December 2017. We are also raising awareness by reporting energy performance in the annual State Of The Estate Report, which is an internal report for the Corporate Management Team to be completed Summer 2017.		Partially Completed	90
2. Training staff to make better use of our buildings eg advising schools to locate after school activities to smaller buildings rather than use the main teaching blocks which need more heating and lighting, however carbon savings would be unquantifiable	This was covered during the CRC training mentioned above. It was also discussed during the Building Energy Management System (BEMS) project for St Gwladys school in relation to zoning of heating for parts of the school. The importance of metering and billing was explained to the Economic Development officer for Tredomen Innovation and Gateway buildings as, billing information would better inform occupiers of the building how to reduce energy consumption. In total five BEMS training events were held. Staff also attended the eight school training events using the prescribed presentation .Guidance and advice provided to numerous sites in relation to water leak detection and repair. Advice was provided to Bedwas High head teachers in relation to new catering equipment being installed by the catering department.		Partially Completed	80

WO4 - Carbon Management: Reduce our carbon footprint**Actions - Renewable Technology**

Title	Comment	RAG	Overall Status	% Complete
1. Opportunities exist for further PhotoVoltaic (PV) installations. Some key buildings will be reviewed for suitability, consideration, and installations where proven to be cost effective	The following schemes have been presented to Finance for consideration of funding under the 2016/17 carbon initiatives budget. For Cabinet/CMT to consider:- Caerphilly LC cost £43K, Simple profit £61k Payback 8 yrs. 12 tns/yr carbon Blackwood Comp cost £70K. Simple profit £108k Payback 8 yrs. 21 tns/yrCwrt Rawlin cost £65K. Simple profit £105k Payback 8 yrs. 21 tns/yr Newbridge LC cost £70K. Simple profit £96k Payback 8 yrs. 21 tns/yrRisca LC cost £70K. Simple profit £105k Payback 8 yrs. 21 tns/yrTYB depot cost £56K. Simple profit £105k Payback 7 yrs. 19tns/yr Tredomen Data Centre cost £70K. Simple profit £94k Payback 8 yrs. 21 tns/yr Ground mounted system at Risca Comprehensive and a canopy over the car park at Ty Penallta were considered but not financially viable, as the Feed In Tariff is considerably lower than roof mounted schemes. From the above funding was approved late in 2016/17 for Newbridge Leisure Centre, Risca Leisure Centre and Tir Y Berth Depot. Installation will take place in 17/18 period. Caerphilly Solar Schools Project installed 6 schemes rated at 4 kW during 2016/17. This brings the total number of 4kW systems installed on schools up to 28.		Complete	100
2. Further promote internally the benefits and understanding of the renewable technology at the Carbon Group and possibly other forums such as School Budget forum	Due to workload re prioritisation the Carbon Group did not meet.		Not Met	0

WO4 - Carbon Management: Reduce our carbon footprint

How much did we do?

Title	Actual	Target	Intervention	RAG	Result 12 months ago	Comment
1. The number of CRC training events delivered	1	4	2	Red	2	One CRC training event was delivered. resources redirected to Invest to Save projects and to other service priorities.
2. The number of building Energy Audit Report completed and handed over to building Managers	15	25	12	Yellow	12	15 Energy and water audits were completed. Resource was redirected to the generation of Display Energy certificates.
3. The number of renewable energy technologies (claiming Feed in Tariffs or Renewable Heat Incentive) that are installed, and the merits and benefits of existing renewable schemes. Reported to Carbon Group	0	12	7	Red	7	See page 9 action 2 Comment.
4. The number of Street Lights converted to Light Emitting Diode (LED) format	1255	1255	1000	Green	8142	Since the start of the lamp replacement programme, a total of 10,453 lamps have now been converted to LED's.
5. The number of workshops and events held with schools as part of the Eco Schools programme	36	45	30	Yellow	77	Target reviewed July 2016. The overall aim of this activity, is to reduce the numbers over time, creating self-sufficiency.
6. The number of training sessions, using the prescribed presentation "Energy Savings In Schools", delivered to schools	8	8	6	Green	11	See Page 3 action 3 comments.

WO4 - Carbon Management: Reduce our carbon footprint**How well did we do it?**

Title	Actual	Target	Intervention	RAG	Result 12 months ago	Comment
1. Display Energy Certificate (DEC) - The number of 'Advisory and Recommendation Reports' generated and delivered to building managers (7 yr cycle)	49.00				14	No formal target set. Numbers are decided by those properties that require new/renewed DEC's
2. Total lifetime energy savings (kWh/yr) resulting from the street lighting conversions	340412.00	340412.00	245096.00		2,208,476.00	A total annual savings of 2,835,324 kW/yr has been achieved from the total of 10,453 lamp conversions since the start of the replacement programme. Over the expected 10 yr lifetime a total energy savings is anticipated to be 28,353,240 kWh.
3. % of schools with the highest (green flag) award under the Eco Schools programme as at 31st March	81.00	87.00	80.00		81	The annual result was 73 schools (81%)
4. The number of our schools which achieve a Platinum award under Eco Schools	34.00	34.00	28.00		22	Target reviewed July 2016 and profiled over the year to a total of 34.
5. Spend 75% of the available (Invest to Save - LAEF/Salix) budget in any given year	100.00	75.00	50.00		N/a	2016/17 was one of the best years CCBC has had within the scheme for invest to save projects. The target was exceeded.

WO4 - Carbon Management: Reduce our carbon footprint

Is anyone better off?

Title	Actual	Target	Intervention	RAG	Result 12 months ago	Comment
1. Annual carbon emission savings (Tonnes of CO2) from Council buildings - Resulting from LAEF schemes that have been implemented	127.00				85.29	No formal target set. Determined by qualifying and validated projects as approved. The PI result here, shows potential 'annual savings' (reductions in emissions) of the technologies invested in, within this year. The only Invest to Save Scheme completed during this period is for replacement computer monitors at St Cenydd Comprehensive School, cost £1,608, annual kWh saved 2,654, annual saving £275 and payback of 6.9 years.
2. The lifetime carbon saved on converting to high efficiency street lighting (tonnes/year)	140.00	140.00	100.00		1,091.00	The 2016/17 result is based on 1255 lamp conversions completed during the year. This is in addition to the previous year's lamp conversions, which now amount to a total of 10,453 since the start of the replacement programme. The anticipated lifespan of such conversions is expected to last 10 years. The unit savings of 65 watts per fitting is therefore, likely to give the authority a total annual carbon reduction/saving of approx. 1,373 tonnes/year or 13,734 tonnes over 10 years.

Intranet Website - Information Bulletin:

Water Conservation Awareness

The council is committed to conserving water and have various water saving products installed in our building to minimise the amount of water we consume.

On **Tuesday 9th August** Welsh Water will be visiting Penallta House to offer advice and guidance to staff on how to further reduce our water consumption at work.

The good news is that there are many simple things you can all do at work to reduce the amount of water we use, such as:

- S Don't overfill your kettle, only use as much water as you need
- S Make sure your overflows on buildings and toilets are not running
- S Report any dripping taps to enable repair and don't leave them running longer than necessary when you use them
- S Request a push tap if you don't have them in your toilets
- S Make sure all urinals have flush controls on them
- S Invest in water efficient equipment
- S And remember, a meter reading is often the only way to identify underground leaks!!!



Of course, it is equally important that we conserve water at home. Taking showers instead of baths, turning the tap off when brushing our teeth, and using spray guns on hosepipes, are just some of the ways we can all reduce our water consumption and save money.

During the session, Welsh Water is also offering 50 free water audits to staff and residents of Caerphilly CBC. A Welsh Water engineer will visit your home to discuss your water usage with you, take a water meter reading and survey your bathroom, toilets and kitchen. The engineer will then fit a selection of water saving products from the following:

- S Aquair showerhead – Reduces your shower flow without reducing the performance
- S Tap Aerator Kit – Turns your taps into water efficient outlets with a flow rate of 5 litres per minute.
- S Hose Trigger Gun – You don't have to waste water when hosing your garden with this clever device.
- S Save-A-Flush Device – Reduces the amount of water your toilet uses by when flushing.

If you are not able to visit the stall, a web link to Welsh Water will be made available here from Tuesday. The offer is available until the 12th August.

Shared web-link

Dwr Cymru Welsh Water is offering residents of Caerphilly a free water saving home audit.

Our engineer will visit your home, discuss your water usage with you, take a water meter reading, survey your bathroom, toilets and kitchen and then fit a selection of water saving products from the following:

- Aquair showerhead – Reduces your shower flow without reducing the performance
- Tap Aerator Kit – Turns your taps into water efficient outlets with a flow rate of 5 litres per minute.
- Hose Trigger Gun – You don't have to waste water when hosing your garden with this clever device.
- Save-A-Flush Device – Reduces the amount of water your toilet uses by when flushing.

To apply for a Free Home Water Audit simply visit:
www.aqualogicwc.co.uk/store/dcww/home-visits/

Add the product to your cart and check out, then a member of our team will call you to confirm a convenient time for the visit.

