

# Improvement Objectives

## IO4 - Carbon Management: Reduce our carbon footprint

### 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 (CO<sub>2</sub>) is the most significant and prevalent GHG is 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 gwyrdach i fyw, gweithio ac ymweld



# Improvement Objectives

## **IO4 - Carbon Management: Reduce our carbon footprint**

**Quarter 2** is proven to be **partially successful**, and has the potential to become better.







It has for example;

Encouraged school head teachers and school staff to participate in energy training events.




It has improved awareness and assisted in securing additional funding for sizeable PV arrays on homes for the elderly for installation in Q3. Culminating in projected carbon savings in excess of 1,400 tonnes in its lifetime and offsetting Electricity costs on today's values of £338k across the same period.

## IO4 - Carbon Management: Reduce our carbon footprint

### Actions - Good Housekeeping

Title	Comment	RAG	Overall Status	% Complete
Carbon Reduction Commitment (CRC) Training	<p>Developed and established a 'standardised CRC presentation/training information pack' for use/delivery to school cluster groups, with comprehensive and site specific information, that is tailored to each cluster as relevant. Site specific information includes Display Energy Certificates, site energy audits, benchmarking and CRC costs.</p> <p>This action has not yet started for 15/16 as it has been difficult to gain access to the head teacher cluster groups. Cluster group schedules are pre-determined by their Chair(s) and finding suitable slots is quite difficult. However, we have scheduled 2 Cluster group events; October 2015, and January 2016.</p>		Partially Met	15
General awareness raising through various media formats	<p>We have recorded 18 activities, which include;</p> <ul style="list-style-type: none"> <li>- Intranet awareness on water cost reductions for staff/residents, identifying Invest to save case studies.</li> <li>- specific advice via emails to schools.</li> </ul> <p>For example, a case study was developed into a presentation pack for the School Budget Forum, explaining how Ysgol Penalltau had made a 15% reduction in gas consumption.</p>		In Progress	50
Re-issue benchmark information to building managers	<p>Two of our main utility suppliers (British Gas and EDF energy) have had difficulty in issuing accurate and reliable bills for many months, which is fundamental and key to our ability to produce internal benchmarking information for our sites.</p> <p>Some preparatory work and benchmarking exercises have been started, but cannot be completed until later in the year</p>		Overdue	0
Re-issue energy audits	<p>All existing energy audits were re-issued as a one off exercise planned for 15/16. This was particularly useful for new building managers and any new Headteachers.</p> <p>However, the energy team received a number of calls as a result of this exercise, asking for specific advice on elements of the audits and some schools have asked for their audits to be updated, which we are in the process of doing.</p> <p>The key benefit of such an exercise, is to re-motivate staff to consider improving energy efficiencies in our properties.</p>		Complete	100
Training key staff eg caretakers on building energy management systems	<p>We have trained staff at Penllwyn, Greenhill and Bargoed Primary school. We have also provided training to Blackwood Miners Institute and Islwyn Indoor Bowls which has a community facing benefit.</p>		In Progress	50
Workshops, events and training with staff and pupils in schools	<p>We have developed and implemented a standardised and prescribed information and training presentation pack titled ' Energy Savings In Schools' and to date, we have delivered 5 specific sessions with Fleur De Lys Primary, Waunfawr Primary, Pengam Primary, Tyn Y Wern Primary and Cwrt Rawling Primary schools, with a further 6 currently scheduled between September and November 2015.</p>		In Progress	33

**IO4 - Carbon Management: Reduce our carbon footprint****Actions - Asset Management**

Title	Comment	RAG	Overall Status	% Complete
Pontllanfraith offices are being considered for disposal, which has the potential for savings 409 tonnes of carbon per year	Ongoing. All utilities are still connected. Awaiting confirmation to disconnect supplies.		In Progress	15
There are likely to be numerous properties considered for sale or disposal including the old cash office Risca and the old Caerphilly library which may bring some carbon savings	As at end of Q2 Newbridge Public Toilets have been disposed off, Caerphilly Old Library has been leased out. The Cash Office in Risca has been sold along with Infoquest Youth Building, Pontllanfraith.  These sites will generate a carbon saving, however the new Caerphilly Library may have resulted in an increase in carbon emissions.		In Progress	10
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	Training for this is only provided as part of the wider CRC training. See good housekeeping section CRC training.		In Progress	15

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### Actions - Invest to Save

Title	Comment	RAG	Overall Status	% Complete
Other technologies being considered include, insulation, voltage correction and controls	As at Q2 we have identified that the voltage correction unit from Pontllanfraith House could be relocated to Tir Y Berth depot, and we are currently evaluating suitability of the site. We are also evaluating the feasibility of 54 invest to save schemes, such as; Computer Monitors / Building Energy Management Systems / Swimming Pool Pumps / Property Lighting & Controls / Large Scale PV Arrays (>50 Kw), as possible future projects to implement. We have surveyed all CCBC's Homes for the Elderly (x9 HFE's) for their likely opportunities for PV arrays.	⊖	In Progress	25
There is opportunity to replace existing street lighting lamps (90 watts) with high efficiency LED's (19 watts) units	4,000 Lamps (gear trays) have been changed to date with a further 4,000+ planned for Q3 and Q4.	⊖	Partially Completed	45
To promote understanding and benefits of water conservation through consumption management and control across schools, leisure, and other non- domestic buildings.	Other than the issue of the message below on the intranet, we have been restricted on this action due to resource issues (Maternity leave) and prioritising workloads.  "If your a customer of welsh water and your total household income is £12,500 or less a year, you may be entitled to up to 55% or an average of £250 off your water and sewerage bill. This is an average ammount and we will be able to confirm the reduction from your bill if you are eligible and after you apply. For Further information <a href="http://www.dwrcymru.co.uk/en/my-account/helpu.aspx">www.dwrcymru.co.uk/en/my-account/helpu.aspx</a> .  However, in each of the 36 Energy Audits Reports that were issued to Q2, there was specific guidance on efficient water conservation technologies e.g. push taps and urinal controls. The audits also made reference to the importance of maintenance to ensure these control devices are operating as intended. Moving forward it has been decided that additional water conservation information will be provided for audits completed in Q4 onwards, which will include guidance on e.g. leak detection	⊖	In Progress	30
Various building energy management systems	We have identified the need for additional heating controls at Tir Y berth depot and are awaiting a formal quote to establish if there is a viable payback rate for investment.  See also the comments reported against the action: Other Technologies....above.	⊖	In Progress	25
Various lighting upgrades	We have identified 953 lights in TY Penallta that can be changed to a more energy efficient format called Light Emitting Diode (LED). To date, we have sourced and trialed some LED lamps, surveyed Ty Penallta and now need to establish likely payback rates before progressing to tender and then installation (costs being met from the internal Invest to Save Scheme). Wattages would reduce from 88 watts down to 18 or 22 watts depending on location. these would provide significant carbon savings. Payback rates are being established. we have also identified Tir Y Berth Primary school as a site requiring lighting improvements are are evaluating payback rates. We also think we have a viable lighting project at Tir Y Berth garage.	⊖	In Progress	20

**IO4 - Carbon Management: Reduce our carbon footprint****Actions - Renewable Technology**

Title	Comment	RAG	Overall Status	% Complete
Further promote internally the benefits and understanding of the renewable technology at the Carbon Group and possibly other forums such as School Budget forum	We outlined the performance early in Q1 on the performance of the PV systems for the previous year. All PV's outperformed the anticipated generation levels.			0
The forthcoming Islwyn West Comprehensive School in Oakdale is likely to require a PV system in the region of 72kwp, which would provide carbon savings in the region of 34 tonnes per year. This will require preparation consideration in 2015/	PV's are still being considered for the school, however no progress to report on the development at this time.			0

**IO4 - Carbon Management: Reduce our carbon footprint**

**Note:** All Targets are annual values  
(Except for the Eco Schools Platinum Award measure)

**How much did we do?**

Title	Actual	Target	Intervention	RAG	Result 12 Months Ago	Comment
The number of workshops and events held with schools as part of the Eco Schools programme		71.00	50.00		91	At the end of Q2, 34 workshops and events have been held.
The number of Street Light converted to Light Emitting Diode (LED) format	4000.00	9110.00	5000.00	⊖	N/a	New measure for 15/16, the 9110 is an annual target. As at the end of Q2 4,000 Lamps (gear trays) have been changed with the remainder to be completed by 31st March 16.
The number of Salix projects delivered within the year	4.00				12	No formal target was set for 2015/16 as identified projects must be tendered and evaluated for payback. Up to 2014/15, there were 220 projects delivered in a 10 year period.  Projects are: new computer monitors for YGCR, Heolddu LC pool cover and pool pumps. New lighting for St cenydd Comp with installation in Q3/4.
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.	7.00	7.00	5.00	⊖	7	At the start of Q1 we provided a full report to the Carbon Group on the performance of the 7 schemes for 2014/15. We reported that all of the schemes were generating power and therefore carbon savings far in excess of the anticipated output. Trinity Fields school had generated 28% higher output than projected. Carbon group was satisfied with the PV's performance with no follow up actions required.
The number of energy awareness sessions delivered to schools	5.00	15.00	10.00	⊖	11	We have a further 6 training sessions scheduled between September and the end of November 15.
The number of CRC training events delivered		4.00	2.00		2	The target for 15/16 is 4 groups, depending on Headteacher accessibility.  As at the end of Q2 none delivered. It was difficult to gain access to the headteacher cluster group as agendas were already full. Next training session scheduled for October 15, then January 16
No of Energy Audit Reports discussed and handed over to site Managers	8.00	25.00	15.00	⬇	14	Resources between 2013 and 2015 were diverted to cover DEC's plus other work areas such as LAEF.  As at Q2 Resources are again an issue with the priority being DEC generation and covering maternity leave.

**IO4 - Carbon Management: Reduce our carbon footprint****How well did we do it?**

Title	Actual	Target	Intervention	RAG	Result 12 Months Ago	Comment
Display Energy Certificate (DEC) - The number of 'Advisory and Recommendation Reports' generated and delivered to building managers (7 yr cycle)	6.00					As at Q2, no Formal Targets set as the property portfolio is dynamic and the number of properties requireing DEC changes each year.
Display Energy Certificate (DEC) - The number of 'Property Certificates' generated and issued within the year	36.00	90.00	80.00	⬇️	89	As at Q2, progress has been slower than anticipated due to Maternity leave.
% of schools with the highest (green flag) award under the Eco Schools programme as at 31st March	76.00	73.00	70.00	⬆️	71	At the end of quarter 2, 68 schools, equating to 76% of schools have Green Flags
The number of our schools which achieve a Platinum award under Eco Schools	20.00	18.00	16.00	⬇️	N/a	Monitored quarterly. The 15/16 year end Target is 21.
Total lifetime energy savings (kWh) resulting from the street lighting conversions	3616600.00	2500000.00	1800000.00	⬇️	N/a	The target of 2,500,000 kWh is based on converting the full 9,000+ planned streetlight conversions.



**IO4 - Carbon Management: Reduce our carbon footprint****Is anyone better off?**

Title	Actual	Target	Intervention	RAG	Result 12 Months Ago	Comment
Annual carbon emission savings (Tonnes of CO2) from Council buildings - Resulting from LAEF schemes that have been implemented	42.60				118	<p>42.6 tonnes in Q2 from the following projects. heolddu LC pool cover and pool pumps. St Cenydd Comprehensive new PC monitors and new lighting at St cenydd Comprehensive.</p> <p>Yearly measure - No target formally set for 15/16 as identified projects must be tendered and evaluated for payback rates. This measure forms part of the assessment (contribution) towards the CCBC Carbon Reduction Strategy (2009) and is calculated from the Local Authority Energy Fund (LAEF) schemes that were implemented (within the year). Through all our schemes/projects delivered at the end of 14/15, a total of 2,484 t annual carbon savings has been realised. The PI result here, shows potential 'annual savings' (reductions in emissions) of the technologies invested in, within this year.</p>
The lifetime carbon saved on converting to high efficiency street lighting (tonnes/year)	1940.00	1235.00	700.00	☐	N/a	<p>New measure for 15/16, based on the number of street lights changed during the year. A typical year would see the lights on for 4,173 hours. These carbon savings are for 1,391 burn hours as they have only been running for a small proportion of the year. The lamps last 10 years so lifetime savings to date would be 194 tonnes * 10 = 1,940 tonnes saved.</p>