

# Appendix 1: Wellbeing Objective 4. Carbon Management: Reduce Our Carbon Footprint (scorecard).

## End of year report 2017/18

### In summary:

- In Line with the Carbon Reduction Strategy (2009) this Wellbeing Objective focused on 4 priorities to reduce emissions, namely; Good Housekeeping; Invest to Save; Design and Asset Management; Renewable Technology.
- This report highlights key progress and achievements made during the period April 2017 to March 2018.
- The comments outlined in this report provide a snapshot of the progress made.
- Delivery and completion of the objective as at March 2018, is deemed to be **'partly successful'**.

### Key headlines:

Energy consumption savings and reduction of carbon emissions can be evidenced through our:

- Good Housekeeping; where information and energy management intelligence continues to be shared with and across our site managers, corporate offices, depots and school environments.
- Continued implementation of Invest-To-Save technologies in particular the introduction of energy efficient lighting which makes significant carbon savings and improves working and teaching environments.
- Asset Management. For example; modernisation of schools, leisure centres and rationalisation and improved usage of offices/depots.
- Renewable technologies, for example Photovoltaic (PV) installations at three sites.
  
- The feasibility/pilot study planned for testing and seeking opportunities for electric vehicle use, has taken a slow start due to the lack of vehicles being made available. However, for the limited testing encountered, there has been a positive response to date with further considerations progressing into 2018/19.

## This objective shows commitment/contribution to the Wellbeing of Future Generations (Wales) Act 2015 by;

Goal:	Comment
<b>Prosperous</b>	Through improved controls, better management and reduced consumption of valuable resources, enables 'constrained resources' to be diverted to other areas of need and investment. Also, through education, our populous are better informed to prevent restrictive or damaging decisions for the future and hopefully, open wider opportunities to further enhance prosperity.
<b>Resilient</b>	By ensuring a well-educated and quality managed society and environment (minimising waste and pollution), we will secure current and future prospects due to our ability to cope.
<b>Healthier</b>	Reducing environmental pollutants will help lead to improving health prospects of the environment, its biodiversity and all that lives and exists in it.
<b>More equal</b>	By considering and sharing localised issues and learning from our wider communities, partners and contacts, contractors and suppliers, we are helping our society to ensure they are not 'left-behind' those in other societies.
<b>Cohesive Communities</b>	By considering localised issues, sharing with our colleagues in other institutions and areas, and learning from our wider communities, partners and contacts, we are able to establish purposeful partnership and collaborative arrangements to secure the best outcomes for all involved.
<b>Globally Responsible</b>	The UK Government has committed to take action on reducing carbon emissions and has introduced the Climate Change Act (2008). This is further supported by the Welsh Government Climate Change Strategy 2010 and the Environment (Wales) Act 2016. Caerphilly has also implemented its own Carbon Reduction Strategy driving actions to reduce energy consumptions and emissions.
<b>Vibrant Culture and Welsh Language</b>	Not applicable
Working:	Comment
<b>Long-term</b>	Caerphilly County Borough Council (CCBC) has an annual carbon emission in excess of 26,000 tonnes. 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 over multiple years. Some 'invest to save' schemes have a payback less than 10 years, but, a technology lifespan of up to 30 years.
<b>Prevention</b>	Our climate is undergoing changes partly as a result of green-house gas (GHG) emissions from human activity. One of the most prevalent GHG is Carbon dioxide (CO <sub>2</sub> ) which is emitted from the burning of fossil fuels like coal, oil and natural gas.
<b>Involvement</b>	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 emissions emitted within the borough. We also work with carbon management advisory organisations, utility suppliers and Resource Efficient Wales (who replaced the Carbon Trust).
<b>Collaboration</b>	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. This cannot be done in isolation, so shared intelligence is gravitated from our suppliers, contracted partners, between clients, governing and controlling bodies and other network arrangements.
<b>Integration</b>	

## This objective considered:

National Well-being Goals Appendix A	Council priorities 2013/17	Well-being Objectives 2017/18	Service Specific outcomes (if applicable)
<ul style="list-style-type: none"> <li>•A globally responsible Wales</li> <li>•A prosperous Wales</li> <li>•A resilient Wales</li> <li>•A healthier Wales</li> <li>•A more equal Wales</li> <li>•A Wales of cohesive communities</li> </ul>	8. Affordability – To deliver the medium term financial plan aimed at providing a period of stability that helps the Authority to have a range of services that are in the future sustainable	WO4. Carbon Management: Reduce our carbon footprint	Carbon Management: Reduce our Carbon Footprint

Key Actions / Tasks	Owner & Completion Date	Additional resource required?	Success Criteria	Progress update
Raise awareness and understanding of carbon management and improve control through; advisory, education, training, guidance, skills and operational activities	Paul Rossiter Ongoing	N/A	Good Housekeeping, Invest To Save and Asset Management	We have registered 104 individual activities that raise awareness. Ranging from emails to schools, intranet advice and bespoke guidance to individual sites. <ul style="list-style-type: none"> <li>• Examples include intranet advice on: Seven items on the intranet giving guidance on utility conservation.</li> <li>• Water leak guidance to various properties</li> <li>• Numerous updates to affected properties on TRIAD warning in relation to electricity contract costs.</li> <li>• Energy conservation presentation to children at various schools.</li> <li>• Heating control guidance for schools entering holiday periods</li> <li>• Carbon Tax costs provided to education finance for school budgeting.</li> <li>• An information note was distributed outlining the benefits of the new LED lighting upgrade, at TY Penallta.</li> <li>• Outline of the benefits and availability of the LAEF invest to save funding scheme</li> </ul>

Key Actions / Tasks	Owner & Completion Date	Additional resource required?	Success Criteria	Progress update
				<ul style="list-style-type: none"> <li>• Good Housekeeping – tips on general energy savings.</li> <li>• Winter is Coming – saving on heating.</li> <li>• Various consumption reports for managers for example Caerphilly Leisure Centre and Ty Penallta.</li> </ul> <p>In addition to the above awareness material, examples of additional email advice particular to schools included:</p> <ul style="list-style-type: none"> <li>• Switch off and Save guidance note issued to schools.</li> <li>• Water Meter Downsizing.</li> <li>• We offered all schools an opportunity to take lights that we removed from TY Penallta for re use in their schools. They were eventually taken by Heolddu Comprehensive to be used as a temporary solution to their lighting problems.</li> <li>• Water conservation tips</li> <li>• Summer Closedown Checklist – this is to be issued ahead of all holiday periods and covers – Metering, Heating, Equipment and Maintenance.</li> <li>• The benefits of Building Energy Management System in controlling heating costs.</li> <li>• Hidden Water – awareness on water consumption</li> </ul> <p>We wrote to all community centre secretaries giving advice on utility suppliers.</p> <p>We provided guidance and a costed proposal for Blackwood Miners institute to have a PV array. Cost £29k, generated 29,500kW per year and pays back in 8.3 years. The scheme would save 13 tonnes of carbon per year.</p> <p>We provided training to 31 schools on energy efficiency which was directly aimed at school children but also incorporated a few members of staff.</p> <p>We contacted many individual sites in relation to utility supplies where we suspected there may be an issue surrounding usage. Graphs evidencing spikes in consumption were provided. Building Energy Management Systems (boilers) training was provided to St Gwladys and Risca Primary.</p>

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Tasks	Completion Date	resource required?	Criteria																																																																		
Better controlled use of our facilities through; asset rationalisation (property stock), energy and utility audits, and the feasibility of further technology investments	Paul Rossiter Ongoing	N/A	Good Housekeeping, Invest To Save and Asset Management	<p>We issued 9 detailed energy and water audits outlining opportunities for energy improvements:</p> <ul style="list-style-type: none"> <li>• St Helens RC primary school</li> <li>• Bryn Awel Primary school</li> <li>• Caerphilly Leisure Centre</li> <li>• Risca Leisure centre</li> <li>• Llancaiach Junior school</li> <li>• The Hanger 81 community centre</li> <li>• Offices at: Mill road, TY Gilfach, Foxes Lane, TY Gradffa, Penmaen House</li> <li>• Newbridge Leisure Centre</li> <li>• Primary schools: Gilfach, Ysgol Ivor Bach, Park, Ysgol Penallta</li> </ul> <p>We have made financial investments to save energy, carbon and cost through the LAEF scheme. Key projects being :</p> <table border="1"> <thead> <tr> <th>Site</th> <th>Project Type</th> <th>Cost</th> <th>Annual kWh Saved</th> <th>Annual Carbon tns Saved</th> </tr> </thead> <tbody> <tr> <td>Blackwood Comp</td> <td>LED Lighting</td> <td>£2,000</td> <td>2,377</td> <td>1.08</td> </tr> <tr> <td>Trinant Primary</td> <td>LED Lighting</td> <td>£14,683</td> <td>14,535</td> <td>6.48</td> </tr> <tr> <td>Twyn Primary</td> <td>LED Lighting</td> <td>£7,535</td> <td>11,550</td> <td>5.14</td> </tr> <tr> <td>Trinant Primary</td> <td>Insulation</td> <td>£1,801</td> <td>12,935</td> <td>7.37</td> </tr> <tr> <td>Heolddu LC</td> <td>LED Flood Lighting</td> <td>£8,015</td> <td>9,095</td> <td>4.08</td> </tr> <tr> <td>Tredomen House</td> <td>LED Lighting</td> <td>£750</td> <td>1,225</td> <td>0.55</td> </tr> <tr> <td>TY Penallta Offices</td> <td>LED Lighting</td> <td>£17,489</td> <td>18,787</td> <td>7.22</td> </tr> <tr> <td>Bryn Primary</td> <td>Insulation</td> <td>£360</td> <td>1245</td> <td>0.23</td> </tr> <tr> <td>TY Penallta Chief Exec</td> <td>LED Lighting</td> <td>£4,840</td> <td>6744</td> <td>2.59</td> </tr> <tr> <td>Sue Noake LC</td> <td>LED Lighting</td> <td>£6,390</td> <td>7212</td> <td>3.2</td> </tr> <tr> <td>St Cenydd Comp</td> <td>LED Lighting</td> <td>£48,108</td> <td>59571</td> <td>22.9</td> </tr> <tr> <td colspan="2">Total</td> <td>£111,971</td> <td>145,276</td> <td>61</td> </tr> </tbody> </table> <p>The total investment for 2017/18 was £112k, which will save 61 tonnes of carbon each year. Additional projects have been identified for 2018/19. Ongoing office lighting improvements for Ty Penallta is scheduled for the Autumn 2018/19.</p>	Site	Project Type	Cost	Annual kWh Saved	Annual Carbon tns Saved	Blackwood Comp	LED Lighting	£2,000	2,377	1.08	Trinant Primary	LED Lighting	£14,683	14,535	6.48	Twyn Primary	LED Lighting	£7,535	11,550	5.14	Trinant Primary	Insulation	£1,801	12,935	7.37	Heolddu LC	LED Flood Lighting	£8,015	9,095	4.08	Tredomen House	LED Lighting	£750	1,225	0.55	TY Penallta Offices	LED Lighting	£17,489	18,787	7.22	Bryn Primary	Insulation	£360	1245	0.23	TY Penallta Chief Exec	LED Lighting	£4,840	6744	2.59	Sue Noake LC	LED Lighting	£6,390	7212	3.2	St Cenydd Comp	LED Lighting	£48,108	59571	22.9	Total		£111,971	145,276	61
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We have considered and rejected projects based on lengthy pay back rates for:

- Deri Primary School (LED lighting 9.3 yr payback)
- Tredomen Park Car Park (LED lighting 14 yr payback)
- Plasyfelin Primary (LED lighting). Building not suitable.
- Pontlloftyn 3G pitch (led lighting)
- The hanger 81 (led LIGHTING 20 years)
- Winding house museum (led 11 years)

PV solar schemes have been identified for 3 sites (including Risca Leisure Centre, Tredomen Technology and Business Centre and Ystrad Mynach Centre for Sporting Excellence totalling £161k. These sites will anticipated annual carbon savings is in excess of 51 tonnes a year for the next 20+years and generating an estimated simple lifetime profit circa £280k. 582 PV panels will be installed.

Ty Dyffryn is now empty with staff relocated to other existing offices. The annual carbon emissions for this building when occupied was circa 190 tonnes per year and most of this will now be saved.

Oakdale and Pontllanfraith Comprehensive schools are closed and have been replaced by Islwyn High Comprehensive. Islwyn High has all Light Emitting Diode lighting, improved insulation levels and is a smaller building compared to the old ones. There are short periods when the building draws no electricity from the electricity grid. These are major factors contributing to the carbon savings being made.

In addition to our larger scale PV projects, small scale PV systems of up to 4kW were installed on 17 schools, which have an overall carbon saving of approximately 32 tonnes per year and will be used to teach school pupils about sustainable energy.

The authority is set to make a decision on its street lighting in the Autumn 2018. The authority will establish if the street lighting stock will be converted to Light Emitting Diode format.

Key Actions / Tasks	Owner & Completion Date	Additional resource required?	Success Criteria	Progress update
<p>Feasibility study and piloting of integrating Electric/Hybrid vehicles into parts of our vehicle fleet.</p>	<p>Paul Cooke. Corporate Policy 31/03/18</p>	<p>Yes</p>	<p>5 vehicles on the road</p>	<p>Multiple over-night slow charging power points have been installed: x6 at Ty Penallta and x5 at Tir Y Berth Depot.</p> <p>Our Meals on Wheels (MOW) service and Policy Team trialled an electric vehicle for one week in July 2017 with very positive feedback. Staff found it very easy to adapt to, charge-up and generally a pleasure to drive/use. They did find the vehicle quiet as there was no engine noise, but that was the only non-positive comment from them.</p> <p>We are awaiting availability and price confirmation so we can lease 3 vehicles (2 for Meals on Wheels and 1 pool vehicle). These vehicles will be used by a variety of employees/services, so they can determine if they could deliver their service using an electric vehicle.</p> <p>We are also waiting for a demonstration vehicle for our Countryside Services to trial, in order to determine if they can deliver their service using an electric vehicle. If successful, they will lease 1 vehicle.</p> <p>At the end of March 2018, proposals have been implemented to consider the installation of additional 'fast charge' power point units at Ty Penallta. This will further support council services and create opportunities for using the electric vehicles, as they will be able to top-up charge during the day as well as using the slow charge points over night.</p>

Measures of priority objective	Target 2017/18	Result 2017/18	Progress / Comments
The number of building energy audits completed and handed over to building managers.	15	16	The number of energy audits completed exceeded the target. This means that key staff within audited buildings are better informed on how to reduce energy consumption and where to invest within the building.
Identify and implement invest to save projects under the LAEF scheme	80% (of Pot 1 Capital)	187% (This includes additional funding from pot 2 – same scheme)	The target spend for the period was exceeded by spending £112k, this was across 11 project. Due to the target being exceeded it meant that Caerphilly positioned strongly in the national league tables.
Number of electric charging locations approved and installations completed at Council Offices	2 sites 10 charging points)	2 sites (11 charging points)	6 charging points at Penallta House, 5 charging points at Tir Y Berth Depot installed already. Additional being considered for future periods.
Number and type of vehicles obtained for piloting	5 small vans	1 vehicle Nissan light duty van - short term in 2017	Awaiting confirmation of vehicle pricing and availability to start leasing vehicles for the pilot (delayed throughout 2017/18 and will be followed up moving into summer of 2018)
The number of our schools which achieve accreditation to Eco Schools Green Flag. (CCBC currently have 90 schools)	80	78 (at March 2018)	13 schools renewed their Eco School Green Flag award during 2017/18. 36 schools have achieved their Platinum award (4th Green Flag) to date 8 schools have lost their Green Flag status