

SCRUTINY COMMITTEE REPORT

Date Written	15 th December 2021
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Service Area	Neighbourhood Services
Committee Date	17 th January 2022

To: Chair, Ladies and Gentlemen

Update on Carbon & Energy Management Activities

1.0 SUMMARY OF THE REPORT

- 1.1 This report provides an update on the Carbon & Energy management activities since the written report given to Scrutiny on 1st March 2021.

2.0 RECOMMENDATION(S)

- 2.1. The content of this report to be discussed and noted.

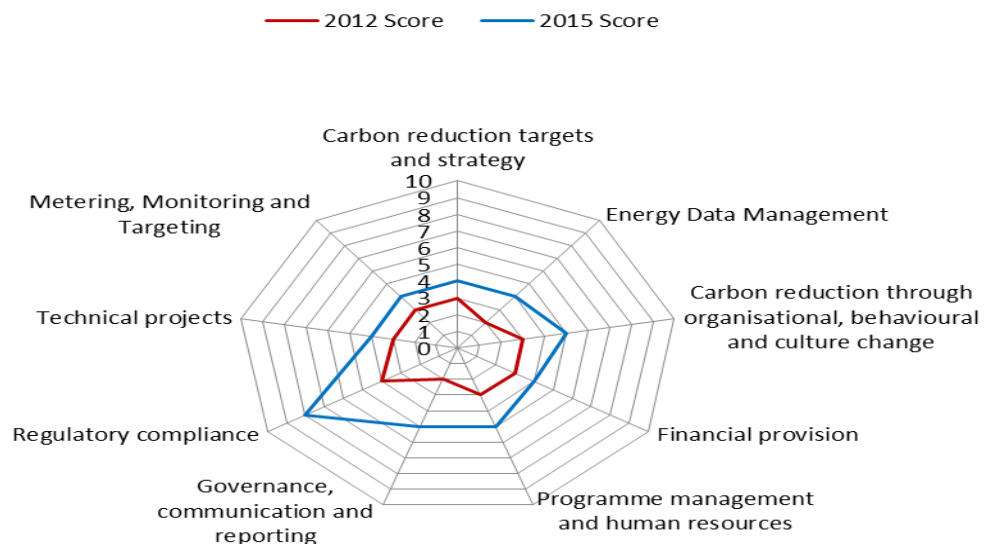
3.0 INTRODUCTION AND BACKGROUND

- 3.1 In October 2019 MTCBC formally approved its first Carbon Management Plan. The Plan outlined MTCBC's aspirational strategy to reduce CO₂ Emissions from its buildings by 15% by 2025.
- 3.2 The Energy Unit have been working towards implementing different elements of the plan. This includes installing energy conservation measures and renewables in council buildings. Installing gas, electric and water smart meters and improving the overall Energy Management capabilities within the authority, to reduce costs and Carbon Emissions.

- 3.3 In March 2019 the Welsh Government set targets to achieve a Carbon Neutral Public Sector by 2030. Work is in progress to help decarbonise the MTCBC buildings, this work will need to continue, to maintain the momentum and help the Council reduce emissions further.
- 3.4 Taking swift action over the next 10 years is critical to ensure we can work towards the Welsh Government ambition. This will rely on us moving away from fossil fuel heating systems, increasing the amount of renewables we have on our buildings and reducing our energy demands as much as possible. The following report gives an overview of some of the actions taking place to reduce carbon emissions and energy costs in buildings within MTCBC.

4.0 WHERE WE WERE

- 4.1 In 2012 Merthyr Tydfil County Borough Council along with other Local Authorities in Wales were the subject of a sector specific Carbon Management Review conducted by the Carbon Trust in Wales on behalf of the Welsh Government. This review ranked Merthyr Tydfil County Borough Council 21st out of the 22 Local Authorities in Wales and identified that the Council needed to improve in all aspects of Carbon and Energy Management.
- 4.2 The 2015 Carbon Management Review considered MTCBC's position in relation to the 2012 Carbon Trust study in a qualitative assessment across a range of thematic areas with the outcomes summarised as shown below.



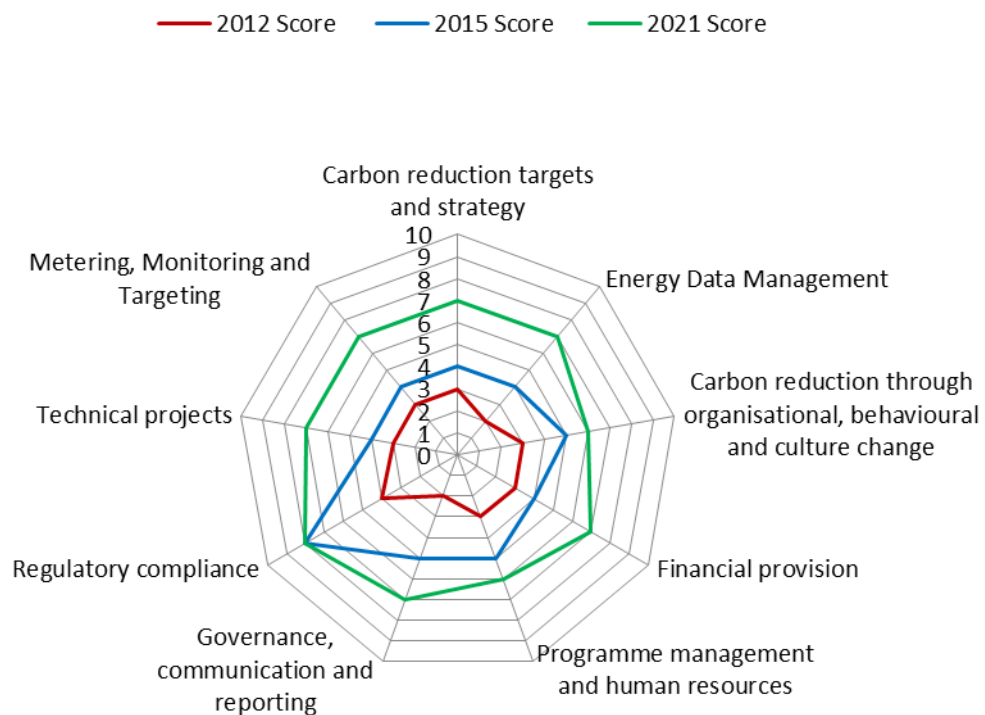
- 4.3 Although the report showed that good progress had been made in some areas with little funding available, it also identified the main challenges faced by the Authority in relation to Carbon Management were:

- Scarce internal funding.
- Limited physical resources with competing priorities.
- An urgent need to improve engagement with staff to change behaviour.
- The lack of a formal Energy Policy and Carbon Management Plan.
- A need to increase engagement with staff to change behaviour.
- Poor data management processes - No Energy Management Software.
- Inadequate metering capabilities for gas, water and electric.

5.0 WHERE WE ARE NOW

5.1 Qualitative Assessment

The qualitative assessment has been updated to reflect the progress made to date:



5.2 Carbon Management Plan

5.2.1 The Merthyr Tydfil County Borough Council Carbon Management Plan (CMP) was approved in October 2019.

5.2.2 The Carbon Management Plan outlines Merthyr Tydfil County Borough Council's aspirational strategy to reduce CO2 emissions arising from its' buildings by 15% by 2025.

5.2.3 The Energy Unit have been working towards implementing the different elements of the plan.

This includes:

- Progressing the Welsh Government REFIT Programme.
- Installation of Systemslink Energy Management Software.
- Setting up of Automatic Energy Invoice Validation Software.
- Monitoring and Targeting of Council properties to identify avoidable waste and save energy costs.
- Amending utility supply contracts providing better value for money and cost saving.
- Installation of Electric, Gas, and Water AMR (Automatic Meter Read) meters.
- Increasing no of sites with Trend BMS (Building Management System) thus giving smarter controls of heating, hot water, ventilation systems.
- Setting up annual reporting of Carbon Emissions in buildings.(See Appendix item A for current and previous Co2 Emissions in buildings)
- Carrying out feasibility studies into renewable energy projects in Merthyr Tydfil.

5.3 REFIT

5.3.1 In 2019 MTCBC signed up to the REFIT Energy Efficiency Programme. The programme supports energy efficiency and renewable energy measures, resulting in cash savings from lower energy use and reduced carbon emissions.

5.3.2 The REFIT project is costing £1.093 million, and will save £136,000 and 215 tonnes of Carbon per annum with a payback of 8.0 years. On top of the savings, the Council buildings will also benefit from various electrical and mechanical upgrades resulting in an improved learning and working environment and more comfortable conditions.

5.3.3 After a lengthy procurement and funding approval process, the installation of energy efficiency measures and renewables began in May 2021.

5.3.4 To date over 4000 In-efficient lights have been upgraded to low energy LED light fittings, 600 Solar Panels have been installed on MTCBC buildings and schools, 60 time clocks and 7 Smart heating/hot Water(BMS) systems have been installed.

5.3.5 All will have a positive impact on reducing the council's environmental impact. The remaining projects are set to be complete by May 2021.

5.3.6 The Energy Team is also exploring options for additional projects or further phases to be included into the REFIT project if possible.

5.4 Metering and Monitoring

5.4.1 Historically it has been very difficult to manage electricity, gas and water consumption within the authority due to the inadequate metering and manual data systems resulting in a large amount of estimated energy invoices.

5.4.2 Half-hourly metering is required to understand operational energy use and take actions to reduce costs and consumption, with particular benefits to schools. It also allows the Council to measure the impact of energy conservation technologies (Solar PV/LED Lighting, BMS).

5.4.3 Over the past 3 years' a large amount of progress has been made:

- 95% of the Councils' electric meters are now AMR smart meters.
- 60 out of 73 of the Councils gas meters are now AMR smart meters. *(There is no cost benefit installing them on the remaining 13)*
- 20 data loggers were installed on Council water meters.

5.4.4 The Energy Team are also assisting the Leisure Trust in upgrading their electric, gas and water meters to Smart/AMR.

5.4.5 The benefits of this technology are clear to see with savings made at a number of sites. A great example is the Civic Offices, where the increased visibility of water usage data, resulted in the Energy Team identifying and fixing a number of faulty appliances using water when the building was empty. This reduced water consumption by over 60%.

5.5 New Gas Supplier-Total Gas and Power

5.5.1 As part of the Crown Commercial Service Energy Framework all gas supply contracts successfully transferred to Total Gas and Power in April 2021. A number of Local Authorities were not able to transfer all supplies due to unresolved debt on accounts.

5.5.2 Thankfully, the MTCBC Energy Team were successful in resolving historic debt ensuring the smooth transition to TGP.

5.6 Solar PV - Recycling Centre

5.6.1 As part of the council's ambition to decarbonise, we were successful in securing Welsh Government Circular Economy funding for 2 x Solar PV installations at our recycling centres.

5.6.2 These installations were complete in May 2021, in line with the programme and within budget.

5.6.3 The installations will help offset and minimise our carbon emissions, while also reducing the running costs of the two recycling centres.

5.7 Welsh Government Carbon Targets

5.7.1 In March 2019 the Welsh Government published its plan for a transition to a Low Carbon Economy. The plan sets out Welsh Government's action to cut emissions, meet carbon budgets and support the growth of a Low Carbon Economy.

5.7.2 Welsh Government's ambition is for the public sector to be carbon neutral by 2030. Unfortunately, the delivery plan does not stipulate what additional finances and resources will be allocated to the Public Sector to assist in reaching carbon neutrality.

5.7.3 To support the Welsh Government ambition, the 'Welsh Public Sector Net Zero Carbon Reporting Guide' was published in April 2021. The guide details the operational and organisational scope and emissions data that all public bodies will need to assemble to fulfil the reporting requirements.

- 5.7.4 The aim of the guide is to estimate baseline emissions, identify priority sources and to monitor progress towards meeting the ambition of a Carbon Neutral Public Sector by 2030.
- 5.7.5 The scope includes reporting Carbon Emissions from buildings, fleet, waste, business travel, employee commuting, Leisure Trust, procurement and land use.
- 5.7.6 To ensure MTCBC was able to report in line with the WG Requirements a 'Working Group' was set up to help bring all the different emissions areas together. After collating a large amount of data, MTCBC reported its Carbon Emissions to Welsh Government in November 2021.
- 5.7.7 MTCBC have raised concerns around the WG reporting methodology for procurement which has significant limitations The resulting carbon figures from this area need to be treated with caution as they appear to be based purely on spend (£).
- 5.7.8 Past and previous Carbon Emissions baseline data for MTCBC and this year's MTCBC Carbon Emissions submission to Welsh Government is included Appendix items A and B.

5.8 **Net Zero Plan/Strategy**

- 5.8.1 For MTCBC to make progress and reduce Carbon Emissions', Decarbonisation will need to be embedded into all areas of the Council with individual departments being accountable for their Carbon Footprint and how they reduce it.
- 5.8.2 The Council are currently working with GEP Environmental to develop a Net Zero Carbon Route Map. Work is being carried out with Council officers to set an overall strategy that is consistent with the Council's GHG emissions and level of ambition for Net Zero.
- 5.8.3 Phase 1 is complete and included a data review and creation of GHG Emissions baseline for the council in accordance with the WG guidance. GEP Environmental are currently undertaking Stakeholder workshops. The information gathered from the workshops will help produce a route map and overall Net Zero Carbon Strategy inclusive of Action Plans and Carbon Reduction Priorities.

5.9 **Carbon Literacy**

- 5.9.1. The Energy Team organised Carbon Literacy Training for the Councils Cabinet and CMT in November of this year. Carbon Literacy is an awareness of the carbon costs and impacts of everyday activities and the ability and motivation to reduce emissions on an individual, community and organisational basis.
- 5.9.2 The key aim of the training is to give MTCBC staff better knowledge and understanding of Climate Change and the impacts their occupation or lifestyle has on Carbon Emissions.
- 5.9.3 Helping them to take ownership of their own responsibilities towards climate change both in and out of work.

5.9.4 Further Carbon Literacy training is planned for 2022, which will include SMT, Head teachers and MTCBC staff.

5.10 Apprentice

5.10.1 This year Property Services welcomed into the team the Councils first Energy and Carbon Apprentice.

5.10.2 The apprenticeship is a two-year programme where the individual will attend college or work with a training provider to undertake a knowledge and practical element to the qualification. In college, they will learn the theory and knowledge elements to the role and then back in the workplace they will put into practise what they have learnt and be assessed on how well this has been applied.

5.10.3 The apprentice will be a valuable asset to the Energy Team as we strive to make further improvements and progress towards Decarbonisation.

5.11 Decarbonisation Web Page

5.11.1 The Energy Team have a created the Councils first Decarbonisation web page.

5.11.2 The Web Page will aim to keep staff and residents updated on current Projects and the Councils progress on Decarbonisation. Further content will be added over the next few months, including information on Decarbonisation of Fleet, Land Use and on how staff and residents can make positive changes to reduce Carbon Emissions at home and in work.

5.12 Low Carbon Heat Feasibility

5.12.1 Replacing fossil fuel heating systems with Low Carbon alternatives will be fundamental to Merthyr Tydfil Councils ambition to decarbonise buildings.

5.12.2 Unfortunately, some of these solutions are technically challenging and costly to introduce and run.

5.12.3 To better understand the potential Low Carbon alternatives, MTCBC has commissioned the Welsh Government Energy Service to write a report related to this.

5.12.4 The report will include options appraisals for six MTCBC sample buildings, which will assess the different retrofit options for heat pump systems, heat emitters and thermal fabric improvements. The report outputs will include estimated capex, impacts on running costs and Carbon Emissions and the overall lifetime costs of the alternative systems.

5.12.5 Findings from the report will give the Council a better understanding of these impacts while also helping to provide a platform to enable MTCBC to start installing this type of technology.

5.13 RTI Funding Solar PV Schemes

5.13.1 An important part of Decarbonisation is maximising the amount of renewables on MTCBC buildings, thus reducing our reliance and consumption of electricity from the grid.

5.13.2 The Energy Team will be utilising some of the RTI funding to install additional Solar PV systems on a Care Home and two Primary schools. The Projects are estimated to save approximately 107,000 kg/C02 and £108,000 in energy costs over the life of the systems.

5.13.3 These Projects will also benefit from interactive Solar monitoring systems, accessible online and within the school allowing teachers to integrate the technology and Solar data into the curriculum.

5.14 COVID-19

5.14.1 The government has also issued guidance on the safe use of buildings during the Pandemic. This includes the increased use of natural ventilation via openable windows and doors to improve air quality. As a result it is anticipated that some sites will see an increase in costs (electric and gas) and Carbon Emissions relating to heating systems during the colder parts of the year

5.15 Savings Tracker

5.15.1 The Energy savings tracker highlights some of the energy, carbon and cost savings achieved in the authority since 2015. The savings tracker is broken down into the following areas:

Energy Savings Tracker			
Saving Type	Comments	Cumulative Saving(£)	Cumulative C02 Saving(Tonnes)
Operational Management	2 yr Savings relating to :1) Operational Improvements to Building Management Systems.2)Identification of overspend and avoidable waste using half hourly meter data and carrying corrective actions to reduce energy usage.3) Behavioural change and Carbon Reduction communication messages.4)Lockdown Energy Saving Actions	100,805	395.3
Technical Projects	Technical projects carried out over the past 6 years such as CHP Installation, LED Lighting Upgrades, Boiler and BMS Upgrades. Additional 120k estimated annual savings via REFIT programme when implemented.	178,872	476
Energy Invoicing	2-3 yr Savings related to:1)Identifying Billing Anomalies via bill validation and working with suppliers to obtain rebates.2)Amendment of Energy Supply Contracts thus providing lower rates.	241,219	20.23
Renewables	5 x Installations. Additional 13 to be added next year	18,842	36.5
Design and Asset Management	Afon Taf School-Phased remodelling of site. Outcomes include a reduction in GIA from 12,086m ² (from DEC) to 8,155m ² .	188,843	684
		728581	1,612

6.0 WHERE WE WANT TO BE

- 6.1 All buildings will have Energy Efficiency Measures (LED Lighting, BMS Systems, Renewables) installed which will lower running costs and carbon emissions.
- 6.2 Water and Gas meters have AMR (Automatic Meter Read) capability giving access to half-hourly data. Enabling pro-active energy management of Gas and Water Supplies.
- 6.3 All schools are connected to Trend 963 Building Management System allowing remote monitoring and optimisation of electrical and mechanical services within school buildings.
- 6.4 Implementation of Systemslink Web Reporting module allowing schools and budget holders to access half-hourly energy data. Enabling users to better monitor energy use and costs in their buildings.
- 6.5 Firm proposals and business cases are in place for hard to decarbonise buildings.
- 6.6 All new public sector buildings are built to net zero standards including supply chain impacts.
- 6.7 All remaining existing buildings will be highly energy efficient and/or scheduled for low carbon heat replacement.
- 6.8 Our construction programmes include mandatory Net Zero objectives.

7.0 WHAT WE NEED TO DO NEXT

- 7.1 Continue to implement elements of the Carbon Management Plan.
- 7.2 Continue to work with the Welsh Government Energy Service to develop small and large- scale renewable investment concepts that can be installed on Merthyr Tydfil County Borough Council property and land.
- 7.3 Utilise Systemsink Energy Management Software to monitor sites energy consumption, identify waste and carry out corrective actions to save energy, carbon and costs.
- 7.4 Ensure the most energy efficient equipment and Low Carbon design solutions are used in new construction and refurbishments projects to enable Net Zero Targets to be met.
- 7.5 Develop a clear plan for a route towards being net zero carbon.
- 7.6 Collaborate with experts from the private and third sectors to develop innovative solutions to help towards net zero carbon.
- 7.7 Call on Welsh Governments to provide the necessary support and resources to enable effective carbon reductions.

7.8 Scoping for Low Carbon Heat pilot projects and further progress on remaining energy efficiency opportunities.

8.0 CONTRIBUTION TO WELLBEING OBJECTIVES

8.1 The Carbon and energy management activities directly relate to the authorities Focus on the Future: Wellbeing in our Community Plan and is incorporated in the Environmental Wellbeing 1 scrutiny report in that the reduction in energy use will reduce the amount of CO2 produced by the authority therefore improving the air quality within the County Borough.

JUDITH JONES
DIRECTOR OF NEIGHBOURHOOD
SERVICES

COUNCILLOR MICHELLE JONES
CABINET MEMBER FOR
NEIGHBOURHOOD SERVICES

BACKGROUND PAPERS		
Title of Document(s)	Document(s) Date	Document Location
List the Background documents which have been relied on in preparing the report. E.g. previous minutes of relevant committees		
Does the report contain any issue that may impact the Council's Constitution?		No