

SCRUTINY COMMITTEE REPORT

Date Written	30th November 2020
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Service Area	Neighbourhood Services
Committee Date	1st March 2021

To: Chair, Ladies and Gentlemen

Diweddariad ar Weithgareddau Rheoli Carbon ac Ynni. 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 16th September 2019.

2.0 RECOMMENDATION(S)

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

3.0 INTRODUCTION AND BACKGROUND

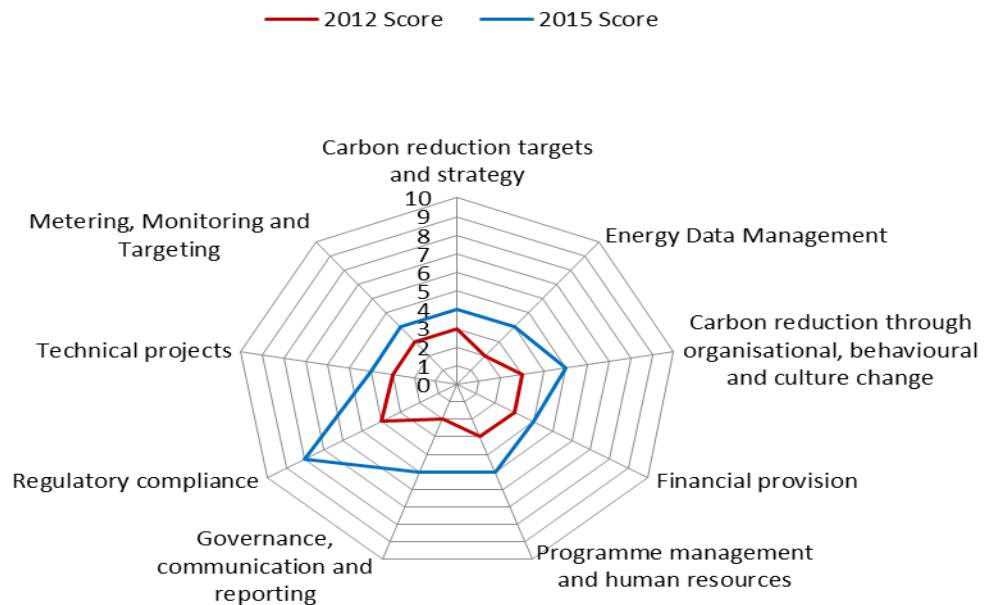
3.1 In 2012 Merthyr Tydfil County Borough Council along with other Local Authorities in Wales were the subject of a sector specific Carbon Management Review conducted by the Carbon Trust in Wales on behalf of the Welsh Government. This review ranked Merthyr Tydfil County Borough Council 21st out of the 22 Local Authorities in Wales and identified that the Council needed to improve in all aspects of Carbon and Energy Management.

3.2 In early 2015, the Authority commissioned an independent Carbon Management Review by Carbon Trust accredited Consultants to measure progress made to date and to provide further strategic direction. Although the report showed that good progress had been made in some areas with little funding available, it also identified there were still many challenges faced by the Authority in relation to Carbon Management.

3.3 In November 2018 the authority appointed a full time Energy Engineer. The Energy Engineer with support from the Energy Officer have been working towards implementing the key recommendations highlighted in the review and actively improving the authorities position in regards to the Energy and Carbon Management.

4.0 WHERE WE WERE

4.1 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.



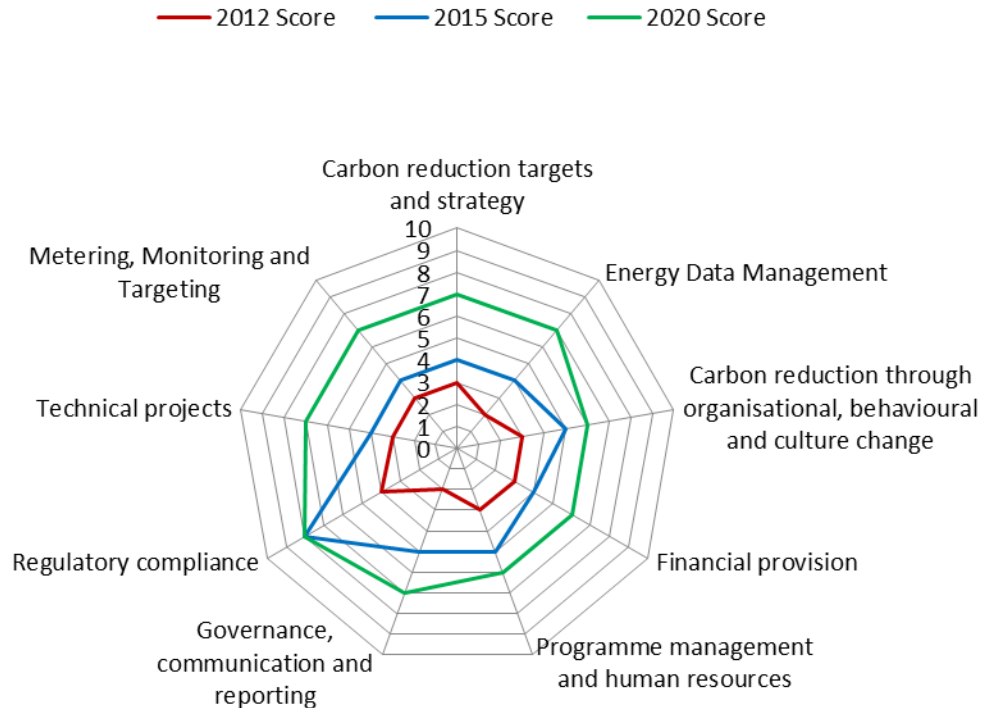
Although the report showed that good progress had been made in some areas with little funding available, it also identified the main challenges faced by the Authority in relation to Carbon Management were:

- 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 and water.

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 REFIT

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. Public bodies can save time and resources procuring REFIT services and works. With an energy performance contracting framework energy and cost savings are guaranteed.

A Salix Interest Free loan is required by MTCBC to pay for the works. Initially energy cost savings are used to pay back the interest free loan. Once the loan is paid in full the authority will benefit fully from the energy cost savings of the technologies installed.

A mini-competition was carried out in September 2019 and Ameresco were appointed in December 2019. Ameresco are a leading provider of renewable and energy efficiency solutions in the UK and North America.

Ameresco have carried out over 50 investment grade energy audits in 31 of Merthyr Tydfil Council properties. These audits have led to the production of the MTCBC Investment Grade Proposal (IGP) document detailing the proposed energy conservation measures, capex, payback and the energy and carbon savings.

The REFIT project is estimated to cost £1.154 million, save £136,000 and 215 tonnes of Carbon per annum with a payback of 8.5 yrs. 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.

Currently, the Council are waiting on approval of the Salix Application to pay for the works while also finalising the works contract. It is anticipated that the installation phase will begin in the second half of 2021.

5.3 Carbon Management Plan

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

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

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 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.
- Carrying out feasibility into potential large-scale renewable energy projects in Merthyr Tydfil.

The Energy Unit will hopefully able to report on total building carbon emissions for 2020-21 by Aug 2021 once all data is collated and calculated.

5.4 **Energy Data Management- Systemslink Energy Management Software**

In 2015 an independent Carbon Management Review recommended that MTCBC needed to urgently invest in Energy and Carbon Management Software.

The availability of accurate data is essential for pro-active energy management, reporting and the ability to measure progress against targets.

It also provides portfolio transparency in the mission to drive down consumption. This requires an extensive network of utility meters and an effective system for manipulating the data collected. Such a system is referred to as Energy and Carbon management software.

Previously Merthyr Tydfil Council did not have adequate Energy Management Systems in place but instead relied upon on manual methods of data management, invoice collation and processing.

As a result, MTCBC was unable to manage energy running costs effectively while also placing large administrative burdens on the energy unit relating to the reporting, collation and authorisation of Energy Invoices and data.

The main benefits of the software are as follows:

- Automatic Validation of Energy Invoices saving staff time and money.
- All energy, cost, meter and site information will be kept in a central database instead of being stored in thousands of different documents.
- Improved monitoring of Energy and Costs.
- Use of Web Module to give buildings managers quick and easy access to utility data where energy information can be communicated clearly using clear, user friendly graphical dashboards.

The Energy Unit has spent the past 9 months installing and populating Systems link Energy Management software in order to assist in the measuring and monitoring of utilities in Merthyr Tydfil Council.

5.5 **Metering and Monitoring**

Historically it has been very difficult to manage gas and water consumption within the authority due to the inadequate metering and manual data systems. Half-hourly metering is required to understand operational energy use and take actions to reduce costs and consumption, with particular benefits to schools.

In March 2020, 40 smart gas meters were installed in MTCBC schools and corporate buildings. Giving the ability to identify avoidable waste and take actions to reduce gas running costs and carbon emissions.

A further 20 smart gas AMR meters will be installed in June 2021 to increase the coverage of smart gas meters the authority has.

It is hoped funding will be available for a three-year programme of water smart meter installations, with the first ten installed in October this year. This will assist the Energy Unit to identify leaks and water inefficiencies quickly thus reducing water usage and overspend.

5.6 **Covid-19 Lockdown**

During the first Coronavirus Lock down the Energy Unit carried out a number of site visits and engaged with building managers on how to minimise energy use while buildings were closed.

This ranged from ensuring all non-essential electrical equipment (printers, computers, lights, phone charges) are turned off, to utilising Building Management Systems to remotely switch off heating and hot water systems that would have otherwise have been left on.

Due to these actions' the buildings used approximately £15,000 less on gas and electricity during the lock down period.

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.

5.7 **Gas-New Supplier-Total Gas and Power**

As part of the Crown Commercial Service Energy Framework all gas supply contracts are planning to transfer to Total Gas and Power in April 2021. The Energy Unit have been working on clearing historic debt to ensure the smooth transition to TGP. At present 29 of the 44 Welsh Public bodies that use the NPS Procurement Framework will not be free to transfer in April 2021 due to debt disputes with Corona Energy.

5.8 **Afon Taf Solar Farm**

To help towards meeting the Welsh Government Targets of Carbon Neutrality, the Energy Unit have been working alongside the Welsh Government Energy Service looking at the potential of large scale renewable energy projects within the Merthyr Tydfil Council Local Authority area.

One area of interest is the land south of Afon Taf High School, which includes a disused playing field and a field west of the school. High Level estimates from Welsh Government suggest that there is sufficient space for a 1.71MW Solar Farm.

The capital costs of a scheme of this size could cost in the region of £1.3 million, annual costs savings of £93,000 and a payback of 14 years. A Solar Farm in this area could also provide electricity to Afon Taf High school and help the authority offset its carbon emissions.

The Energy Unit is currently investigating the survey requirements that maybe needed to obtain planning permission. Further development of the scheme is required to create an outline business case, explore funding streams and gain buy in from the council.

5.9 **Solar PV Aberfan/Dowlais Recycling Centre**

As part of the ambition to decarbonise, the Waste Strategy department were successful in securing Welsh Government Circular Economy funding to install 2 x Solar PV installations at MTCBC recycling centres. The Energy Unit are currently developing proposals and engaging with solar specialists to obtain quotations for the works. These installations will help Merthyr Tydfil County Borough Council offset and minimise its carbon emissions whilst also reducing the running costs for the two recycling centres.

5.10 **Aberfan Schools-Switch-Off Competition**

The Energy Officer is collaborating with NHS Wales on a pilot project with Schools in the Aberfan area. The aim of the project is to educate the pupils in ways they can help their community, the future and ultimately take control.

The Energy Officer will be carrying out a sales pitch to pupils, leading to a mini project being set up. The project will involve pupils trying to reduce the carbon emissions and running costs of the school by carrying out simple actions such as turning off non-essential equipment when not required. Actual energy data will be measured and monitored with the aim being for the staff and pupils to transfer this knowledge and behaviour at home and into the wider community.

5.11 **Welsh Government Carbon Targets**

The Environment Act 2016 requires the Welsh Government to reduce emissions in Wales by at least 80% for the year 2050. As part of the Act Welsh Ministers must prepare and publish a report for each budgetary period setting out their policies and procedures for meeting the new carbon budget.

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.

Welsh Government has set out its ambition 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. The next delivery plan is due in 2021.

Working towards carbon neutrality will be a huge challenge that will require engagement and action by a wide range of services within the council. Decarbonising will require action in buildings, mobility and transport, land use, procurement, governance and planning.

Looking forward MTCBC will need a strategic Council wide approach/strategy to get a better understanding of the costs and actions required to reach carbon neutrality.

5.12 Savings Tracker

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	83,375	298
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.	161,470	425
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.	153,655	17.6
Renewables	1 x Installation on Unit 20. Hopeful of further installations through REFIT and Circular Economy Grant	8,904	11.46
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 .	116,880	513
		524,284	1,265

5.13 Resources

The Energy Engineer and Energy Officer have a combined set of responsibilities, which include energy and carbon management as well as managing the mechanical maintenance contracts and breakdowns with the authority. During the heating season, there are a large number of issues within MTCBC buildings relating to mechanical plant, which need to be resolved. This results in less time being available to spend on Energy and Carbon Management.

The recent capacity exercise identified that a Mechanical Compliance Officer was required within the Property Services team. The new post is being advertised and it is hoped that the position will be filled within the next few months. The extra resource will enable additional time be spent on Energy and Carbon Management.

6.0 WHERE WE WANT TO BE

6.1 The majority of 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. Financial Investment will be required to achieve this.
- 6.3 The majority of schools 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 access to half-hourly energy data. Enabling users to better monitor energy use and costs in their buildings.
- 6.5 New buildings will aim to be Net Zero.

7.0 WHAT WE NEED TO DO NEXT

- 7.1 Continue to implement elements of the Carbon Management Plan
- 7.2 Gain approval of REFIT Salix Application and finalise Works Contract, start installing energy efficiency measures.
- 7.2 Continue to work with the Welsh Government Energy Service to develop large-scale renewable investment concepts that can be installed on Merthyr Tydfil County Borough Council 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 When new boilers or heating systems are installed they will be controlled by a Building Management System (BMS) and linked back to Property Services.
- 7.6 Streamlined annual CO2 reporting mechanism is created utilising Systemslink Energy Management Software in accordance with future Welsh Government reporting requirements.
- 7.7 Develop a clear plan for a route towards being net zero carbon.
- 7.8 Collaborate with experts from the private and third sectors to develop innovative solutions to help towards net zero carbon.
- 7.9 Call on Welsh Governments to provide the necessary support and resources to enable effective carbon reductions

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 borough.

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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