

Appendix 1

Decarbonisation Annual Report

November 2024



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Executive summary

This report summarises the second Annual Report produced by the Decarbonisation Team summarising progress since November 2023. As well as setting out progress Caerphilly County Borough Council is making towards its target of being net zero carbon as an organisation by 2030, the report also includes 2 new sections. Firstly, an additional section on progress in developing a net zero carbon 2050 strategy for the whole county borough, including residents, organisations and businesses in line with Welsh Government's "territorial" aspirations. Secondly a section on the work on climate change adaptation.

There were some notable achievements over 2024 including:

- CCBC has successfully achieved Bronze Carbon Literate Organisation accreditation with the Carbon Literacy Project.
- Inclusion of Decarbonisation in MTC Business Case documents
- Installation of heat pumps at Ty Penallta
- Adoption of Asset Management Strategy 2025-2030
- Ground was broken on the Oakdale Place low carbon mixed tenure residential scheme
- Planning approval for Cwm Ifor Solar Farm & agreement to sell
- Planting a further 24,350 trees to a total of 105,350 taking us over a third of the way to the 300,000-tree target
- Publication of Carbon Reduction Plan Guidance and delivery of CRP validation training
- 65 attendees at 2050 Strategy Focus Group Event
- Over 20 attendees at Green Libraries Author Talks

2030 Organisational Net Zero Target

The Action Plan is now reviewed annually by each of the 4 working groups. Updates have been provided for each of the actions, and an assessment of progress against each action has been undertaken. Of the 79 actions:

- 27 have been completed,
- 22 are making good progress,
- 17 are making reasonable progress,
- 11 are making poor progress
- 2 have not yet started

A full update of all the actions and their assessed progress is attached as Appendix 2.

Since the previous Annual Report presented in November 2023 there have been significant changes in the financial position of the Authority which has resulted in

changes in project prioritisation, resourcing and reporting. This has meant that a greater focus has been placed on work which directly reduces costs and results in savings. Much decarbonisation work fits into this category with every kilowatt hour of energy that is saved resulting in a financial saving.

The development of the new overarching Mobilising Team Caerphilly (MTC) programme has resulted in changes in project initiation process and project approval processes. Decarbonisation implications are included in the new processes and the Decarbonisation Team routinely provides reports, comments and calculations on the carbon emissions associated with major decisions as part of the business planning and project approval process.

As part of the MTC work there is a move to centralising of services through development of Corporate Landlord and Corporate Fleet functions. The Decarbonisation Team has been actively involved in this work and it is anticipated that these changes will provide significant opportunities to manage and drive down carbon emissions from our properties and vehicles.

Corporate & Cross-Cutting

Carbon emissions data was submitted through the Welsh Public Sector Net Zero Carbon Reporting Scheme in September 2024, in line with the Welsh Government reporting requirements. For the reporting year 2023/24 where we reported an emissions total of 98,632,058 kgCO₂e (23,150,857 kgCO₂e operational emissions plus 75,481,201 kgCO₂e supply chain emissions). This was offset by -7,386,283 kgCO₂e through our land use, giving a submitted carbon emissions figure of 91,245,775 kgCO₂e (or 91,246 tCO₂e).

The reported emissions for 2023/24 show a decrease of 4,648,719 kgCO₂e or 4.85%. This decrease was mostly driven by an improvement in the accuracy of reporting.

The delivery of Carbon Literacy training continued, with 40 officers now accredited. Three CCBC owned courses are in development to begin delivery in late 2024. These courses are each intended to be suit specific audiences; the first, now fully accredited course, is for elected members and senior leaders; one is for officers; and the last is for residents. The latter two courses focus on Carbon Literacy through numeracy in partnership with the Multiply team.

Reduce

Outside of supply chain emissions, emissions from the use of buildings continue to account for the largest proportion of organisational operational emissions and therefore have received continued focus over 2024. Through the Reduce Working Group, high level estimates of costs and required projects have been compiled to decarbonise the corporate estate, including schools. However, little progress has been made on the delivery of decarbonisation projects across the estate.

Upgrades to the ground source heat pumps at Ty Penallta were successfully installed over 2024 to transition the building from gas boiler heating. This project will decrease the emissions from the energy consumed in Ty Penallta and paves the way for further decarbonisation through the use of low-carbon electricity.

An updated Asset Management Strategy has been adopted which details the approach to decarbonisation moving forward – Smaller, Greener, Smarter. Various workstreams are pulled together through this strategy – Corporate Landlord, Asset Efficiency & Rationalisation and Community Asset Transfer. The delivery of these workstreams to decarbonise the estate will require significant resources, both capital and revenue, to bring together the learnings, assess each building's fabric, current & future use and plot a route forward.

The WHQS 23 programme delivery has continued through Caerphilly Homes, with the completion of programmes improving sections of council housing stock to EPC A or high EPC B. Additionally, triple glazing has been installed at 90 properties over 2024.

The Council continues to deliver against its commitment to deliver 1000 new, affordable, low carbon homes by 2033. Developments including a 45 apartment later living scheme and a 92-home flagship development at Oakdale Place. Both developments started on site in 2024. The commitment to deliver new, affordable, low carbon homes that are energy efficient and lower fuel costs for customers is outlined in the Council's Caerphilly Homes Development and Governance Strategy. Through the MTC programme, the ongoing Fleet review has superseded the Reduce Working Group's existing work on decarbonising the council's fleet of vehicles and the installation of EV charging infrastructure. Through this process, the team have been working with Fleet on the creation of an updated Vehicle Replacement Strategy to enable the transition to EV or ultra-low emission vehicles (ULEV).

Poor progress has been made on the reduction of grey fleet and commuting mileage. This will have a renewed focus for 2025, as emissions from grey fleet have risen by 33% from 2022/23 to 2023/24. This will be supported by the findings of Cardiff University Data Science Academy studies on HART grey fleet mileage.

Decarbonisation is being woven through the construction of new domestic and non-domestic buildings. Focus has been on reducing operational emissions of completed buildings alongside reducing emissions through the construction phases.

The impact on reported emissions of the implementation of the waste strategy will not be realised until the next reporting round after April 2024, however, initial indications are that large quantities of waste are now going through recycling over entering the residual waste streams.

Produce

Good progress has been made across the Produce workstream. Planning permission has been granted by PEDW for the proposed 20MW solar farm at Cwm lfor. Cabinet have agreed to sell the project on the open market. This means that

anyone can come forward to purchase the solar farm including public bodies, community energy groups or the private sector.

A reassessment of the feasibility of a hydro-electric scheme at Cwmcarn Forest Drive has been completed. Financial modelling completed as part of this process has shown that the project would be viable with grant funding opportunities in future. Engagement has continued with the Coal Authority over the feasibility of a mine water heat network scheme within the borough. Due to this early engagement, Caerphilly CBC are well placed within Wales to receive further support in the development of a scheme at Pontlloftyn. This scheme is currently going through further feasibility after high level studies showed the promise of the project.

Negotiations are continuing with the Bryn Group to connect their anaerobic digester to the Tredomen Campus via private wire to reduce costs and emissions from the supply of electricity.

Significant funding has been secured to further develop green hydrogen projects within the borough at Coed Top. The focus of the current Innovate UK project is on overcoming the non-technical barriers to decarbonisation and helping communities in understanding how energy projects benefit them.

Offset

An additional 24,350 trees were planted across authority owned land over the 2023/24 planting season. 3,000 of these trees were planted with volunteers during two events held in March 2024 and co-ordinated in support with PSB partners including GAVO and NRW.

Further work has been completed understanding and evaluating authority land for the purposes of offsetting. This has been complimented by the completion of a study to build the business case for offsetting projects. The team have further developed the mechanism for identifying land suitable for offsetting, building in wider environmental and biodiversity considerations to ensure that the best use possible is made of the land.

The team are collaborating with City Science on an Innovate UK funded project to build a tool for a Nature Investment Land Assessment which has the aim of facilitating investment in nature whilst prioritising sequestration and biodiversity benefits.

Buy

The Buy Group have been developing resources for officers on how to incorporate decarbonisation into the procurement cycle, including the provision of standard clauses and terms which can be used through contracts to align with the authority's decarbonisation objectives.

Internally, the group has utilised analysis of spend data to identify the priority sectors for intervention in relation to the emissions of the authority's supply chain. These sectors are: Social Care, Construction, Food, IT Products & Services and Road Transport.

It is recognised that there is significant overlap with the Third Party Spend workstream of the MTC transformation programme and as such the Procurement and Decarbonisation teams have been working closely to ensure that emissions are considered as part of the Third Party Spend review.

Social Care providers have been engaged and worked with the authority on a pilot of a social care specific carbon calculator to enable smaller providers to begin to understand their emissions with a view to taking targeted action to reducing them. Through the EdTech programme, suppliers have been engaged to understand their carbon reduction journeys. This is important in developing specifications and terms within procurement so that officers can advise on what is reasonable to expect of certain sectors.

A two fronted approach has been taken to construction spend. Robert Price, as a supplier of materials have been engaged to understand the emissions embedded within the products that they supply to the council. And alongside this, the Decarbonisation team have been brought in to discussions with project teams by Procurement to ensure that (i) large developments are considering decarbonisation to the extent required for the authority's 2030 target, and (ii) are able to work with the team to provide higher quality data for the annual carbon reporting.

Regionally, the Buy Group have been working with the South East Wales Procurement Network to create guidance on the implementation of WPPN 06/21 which stipulates the provision of Carbon Reduction Plan for contracts over a £5 million threshold. This guidance has been live for over 6 months and is due for review in January.

Next Steps & Priorities

To ensure the interconnectivity of the work of the decarbonisation working groups, it is recommended that the Reduce and Produce working groups are consolidated into one Operational Emissions working group. A priority action for this group is to bring together the various elements of the Asset Management Strategy to develop a fully costed plan for decarbonising the estate considering capital and revenue requirements to achieve net zero.

The organisational shift to Corporate Landlord and Corporate Fleet creates a shift in responsibility for emissions to a corporate model. Service Area Baselines are recommended to be replaced with Corporate Footprints which will facilitate the development of Corporate Carbon Budgets, route maps to zero and a more robust reporting mechanism and metrics for decarbonisation.

Further rollout of Carbon Literacy training to elected members, senior leaders and officers will continue to build skills and further embed decarbonisation into ways of working.

Following from this, further integration of decarbonisation into decision making processes is recommended so that reducing emissions can be fully considered alongside other impacts.

Grey fleet emissions have continued to rise since the introduction of Welsh Government carbon reporting. Tackling this increased mileage will not just reduce emissions, but also represents an opportunity for a financial saving for the authority.

2050 Net Zero Target

In 2021, Welsh Government agreed to a 2050 target for the whole of Wales to achieve Net Zero. Since the declaration of a Climate Emergency in 2019, the Council have been focused on reducing organisational emissions in pursuit of being operationally net zero by 2030. The Caerphilly Local Delivery Group of the Gwent Public Services Board agreed an action to author a partnership strategy document to achieve the 2050 territorial net zero target.

In April 2024, two officers funded through the UK Shared Prosperity Fund were put in place to lead on the development of this strategy. The ambition being that the strategy would be created over 2024/25 and completed by the end of March 2025.

Development of the Strategy

A Task and Finish group was established consisting of members from across the authority and public sector partners including Cardiff Capital Region, GAVO, Gwent Police, South Wales Fire and Rescue Service and Aneurin Bevan University Health Board. Through this group it was determined that the format of the 2050 strategy would follow the Welsh Carbon Budget 2 with chapters focusing on:

- Energy
- Travel
- Land Use & Agriculture
- Waste
- Business
- Buildings

In support of the development of this strategy, a focus group event was held at Ty Penallta in September 2024 which was well attended by 65 residents and businesses.

Accompanying the development of the strategy, officers have SPF interventions for both businesses and residents that form the basis for the funding. Officers have been engaging with businesses and residents on how they can reduce their emissions through various measures such as home energy efficiency improvements. For businesses, officers have conducted in person carbon reduction workshops, networking events and provided signposting to support businesses within the borough.

For residents, officers have participated in public events during Green Libraries Week, engaged at community events and conducted carbon literacy follow up conversations to provide support and guidance on steps that can be taken within the home.

Through collaboration with the employability team, three academy placements have been taken on with the Decarbonisation Team to assist with the pulling together of the 2050 strategy.

Local Area Energy Planning (LAEP)

Beginning in 2023, Welsh Government commissioned the development of Local Area Energy Plans for all local authorities in Wales (except for Pembrokeshire, Conwy, Bridgend and Newport who had already piloted the LAEP process). The consultants commissioned to develop the LAEP for Caerphilly County Borough (and the other local authorities within the Cardiff Capital Region) were ARUP, Carbon Trust and Afallen. The LAEP is a partnership document which sets out the needs for the entire borough and its delivery is not solely the responsibility of the council, but of all partners within the county borough.

The purpose of the LAEP is to provide short-term low regrets actions and interventions for the decarbonisation of the local energy system. Within the Caerphilly LAEP, the council and other stakeholders have reaffirmed commitment to existing actions that are focused on these short-term priorities. However, further work is needed to fully comprehend the wide-ranging complexities of the medium and long-term collaborative actions required to achieve a net zero energy system by 2050.

The Decarbonisation Team received the final draft of the main LAEP report at the end of October 2024. The team are waiting for the remaining documents (Technical Report & Renewable Energy Prospectus) to be finalised and for the suite of documents to be translated so that they can be brought through internal governance processes for endorsement.

Work has begun to collate the identified local priority intervention areas in each local area into regional and national energy plans. The Decarbonisation team continue to be involved in regional and national LAEP forums to contribute to the shaping of the delivery of these plans. How the delivery of the LAEPs will be resourced and co-ordinated moving forward is yet to be established by Welsh Government.

Next Steps & Priorities

The Team intend to have completed and translated a draft of the 2050 Decarbonisation Strategy to go out for public consultation in February 2025.

Following this, the final document should be completed and approved by the end of March 2025.

Once the strategy has been approved, focus will be on the creation of a 2050 Decarbonisation Action Plan. This is subject to securing the necessary funding to resource the required posts within the team.

Climate Adaptation

Welsh Government released an updated Climate Adaptation Strategy for Wales at the end of October 2024 which outlines the interrelated risks and approaches within Wales and identifies a way forward through an updated action plan for Welsh Government in taking further action on adaptation.

With the publication of the WG strategy for adaptation, it is anticipated that there will be a renewed focus on this climate change challenge. The WLGA Climate Strategy Panel have started a new Adaptation task and finish which will be developing a programme to support councils with adaptation planning and service resilience.

The Gwent Wellbeing plan is committed to supporting communities to adapt to the impacts of climate change, recognising that some communities are more exposed to floods, heatwaves, air pollution and other climate risks to health. The first step in setting out an Adaptation Strategy for Gwent is to undertake a Climate Risk Assessment in line with national guidance. Through the Gwent PSB Regional Support Funding, two decarbonisation officers attended MET Office training on assessing climate risk that was co-ordinated by NRW colleagues.

Colleagues from across the PSB including NRW, ABUHB and other local authorities attending the training to build skills and understanding within the region with a view to collaborating on a regional approach to adaptation.

Whilst this work does not necessarily sit within the current remit of the Decarbonisation Team, the team is most likely best placed within the organisation to complete this work. However, this will not be possible with current resource capacity.

Introduction

In June 2019 Caerphilly County Borough Council (CCBC) declared a Climate Emergency and committed to 'making Caerphilly County Borough Council a net zero carbon (NZC) local authority by 2030'. A Decarbonisation Strategy and accompanying Action Plan was approved in November 2020. A Decarbonisation Team was appointed in 2022.

This report highlights the work undertaken across the authority to deliver the actions set out in the Decarbonisation Action Plan. The report includes the work of the Decarbonisation Team, and work undertaken in partnership with multiple teams and service areas internally including Procurement, Land & Property Services, Fleet Services, Caerphilly Homes, Regeneration & Planning, Sustainable Communities for Learning, Social Services, Infrastructure, Countryside, Community & Leisure and Parks.

Aligned with the structure of the Decarbonisation Strategy and Action Plan, working groups have been established to drive forward this work under the following five headings:

- (v) Corporate and Cross-Cutting
- (v) Reduce
- (v) Produce
- (v) Offset
- (v) Buy

This Annual Report is structured to reflect these areas and the work co-ordinated by the respective working groups.

The Decarbonisation Action Plan (Appendix 2) has been reviewed and updated by the respective working groups. The Action Plan for 2024 contained 79 total actions:

| | Corporate | Reduce | Produce | Offset | Buy | Total |
|----------------------------|-----------|--------|---------|--------|-----|-------|
| Completed | 5 | 5 | 5 | 7 | 5 | 27 |
| Good Progress | 2 | 10 | 4 | 2 | 4 | 22 |
| Reasonable Progress | 2 | 7 | 2 | 2 | 4 | 17 |
| Poor Progress | 3 | 5 | 2 | 1 | | 11 |
| Not Yet Started | 2 | | | | | 2 |
| Total | 14 | 27 | 13 | 12 | 13 | 79 |

Table 1, Breakdown of Decarbonisation Action Plan status by Pillar

Since the previous Annual Report presented in November 2023 there have been several significant changes which are reflected in this report. Firstly, the financial position of the Authority has changed resulting in a change in project prioritisation, resourcing and reporting. This has meant that a greater focus has been placed on work which directly reduces costs and results in savings. Much decarbonisation

work fits into this category with every kilowatt hour of energy that is saved resulting in a financial saving.

The development of the new overarching Mobilising Team Caerphilly (MTC) programme has resulted in changes in project initiation process and project approval processes; however, decarbonisation implications are included in the new processes and the Decarbonisation Team routinely provides reports, comments and calculations on the carbon emissions associated with major decisions.

The second significant change since November 2023 is the prioritisation of a Net Zero Carbon ambition by the Gwent Public Services Board (PSB) in line with the Welsh Government ambition for the whole of Wales, including businesses, residents and communities to be NZC by 2050, referred to as the “territorial” NZC target. This is an additional ambition above and beyond the requirement for all public bodies to be NZC by 2030. As a result of the new PSB priority the Decarbonisation Team has taken on the co-ordination of developing the 2050 Net Zero Carbon Caerphilly Strategy, in partnership with the Caerphilly Local Delivery Group of the PSB. Strategic Prosperity Fund (SPF) support has been secured to employ 2 officers to develop this strategy by 31st March 2025. An additional section reporting on progress towards this target has been added to this report.

A third change involves a greater focus on climate change adaptation emerging from Welsh Government. Climate change adaptation involves us adapting what we do as a result of the changing climate, so for instance this would involve upgrading drainage infrastructure to cope with increasingly heavy rainfall or assessing and removing trees which may be vulnerable to increasingly strong winds. This is different from climate change mitigation which involves reducing the causes of climate change by reducing the use of fossil fuels to reduce carbon emissions. A new section on climate adaptation has been added to this report.

1. Organisational 2030 Net Zero Target

Corporate and Cross-Cutting Actions

To achieve Net Zero Carbon by 2030 it is fundamentally important that the organisation is able to measure its carbon emissions. Without measuring emissions and ascertaining the effect of targeted actions, the commitment to Net Zero Carbon is unachievable.

The Corporate and Cross-Cutting section of the Decarbonisation Action Plan focuses firstly on measuring and understanding organisational emissions so that actions for emissions reductions are targeted and measurable. Secondly, there is a need for dissemination of this information and knowledge. A program of awareness raising, and skills development is key to ensuring that decarbonisation is embedded into the organisation's ways of working.

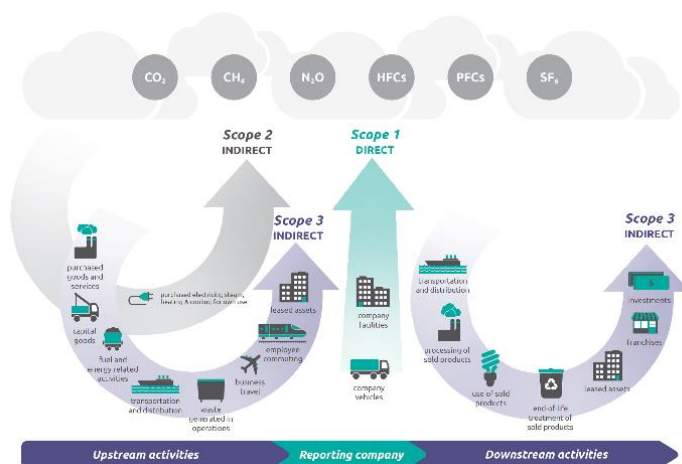
The Decarbonisation Team reviewed the previous Action Plan, revised and agreed the Corporate and Cross-Cutting section into 14 actions (See Appendix 2).

Of these actions:

- 5 are completed
- 2 are going well with good progress
- 2 have had reasonable progress
- 3 have made poor progress
- 2 are not yet started

Emissions Reporting

The most current data is based on the reporting year 2023/24 where we reported an emissions total of 98,632,058 kgCO₂e (23,150,857 kgCO₂e operational emissions plus 75,481,201 kgCO₂e supply chain emissions). This was offset by -7,386,283 kgCO₂e through our land use, giving a submitted carbon emissions figure of **91,245,775 kgCO₂e** (or 91,246 tCO₂e).



The reported emissions for 2023/24 had a decrease of 4,648,719 kgCO₂e or **4.85%**. This decrease was mostly driven by an improvement in the accuracy of reporting. Supply Chain emissions reduced by 7.04% as more of these emissions were able to be ascertained more accurately and moved into

operational emissions, namely fleet fuel card usage. Operational emissions increased by 4.71%. This was driven by an improvement in the methodology for estimating commuting emissions, leading to an increase of 64.54% and a 33.36% increase in Business Travel or Grey Fleet emissions.

| Emissions Source | 2021/22 | 2022/23 | 2023/24 | 2022/23 to 2023/24 | % Change |
|------------------------------|-------------------|-------------------|-------------------|--------------------|---------------|
| Buildings | 14,461,974 | 13,154,526 | 12,460,442 | -694,084 | -5.28% |
| Streetlighting | 976,579 | 797,619 | 962,922 | 165,303 | 20.72% |
| Fleet & Equipment | 4,107,401 | 3,988,849 | 3,919,576 | -69,273 | -1.74% |
| F-Gases | 0 | 9,187 | 14 | -9,173 | -99.85%* |
| Agriculture | 49,972 | 49,355 | 60,748 | 11,393 | 23.08% |
| Business Travel | 298,704 | 637,343 | 849,952 | 212,609 | 33.36% |
| Commuting | 1,299,784 | 2,124,885 | 3,496,315 | 1,371,430 | 64.54% |
| Homeworking | 886,897 | 912,032 | 955,599 | 43,567 | 4.78% |
| Municipal Waste | 478,894 | 436,695 | 445,289 | 8,594 | 1.97% |
| Total Operational | 22,560,205 | 22,110,491 | 23,150,857 | 1,040,366 | 4.71% |
| Total Land Use | -7,420,489 | -7,413,691 | -7,386,283 | 27,408 | +0.37% |
| Supply Chain | 79,117,586 | 81,197,694 | 75,481,201 | -5,716,493 | -7.04% |
| Total Emissions | 94,257,302 | 95,894,494 | 91,245,775 | -4,648,719 | -4.85% |

Table 2, Breakdown of Organisational Carbon Emissions 2021/22 – 2023/24

* F-Gas percentage removed from conditional formatting due to anomalous impact.

F-Gas emissions decreased dramatically. This is due to gaps in this year's reporting data. Quantities of F-Gas consumption are estimated and compiled through the spend data. Due to a lack of clarity and accuracy within the spend data it is difficult to ascertain in some instances what has been purchased and therefore the team were unable to accurately record F-Gas usage.

Buildings emissions decreased by 5.28%. This decrease was led by a decrease in emissions from Corporate Offices and Leisure Centres. This is discussed in more detail in the Reduce section below.

The increase in emissions from Business Travel and Commuting are due to improved data collection and data methodology for the most recent reporting year. Within business travel, claimed mileage increased by over 200,000 miles, leading to an increase in emissions. Commuting methodology was updated to correctly account for the proportion of the workforce that has to commute each day. However, these emissions estimates are still based on a travel survey which is now 5 years out of date. It is important that the prepared commuting and homeworking survey is completed over the next year to properly gauge commuting and homeworking emissions. This data would also assist other areas of the strategy by providing key information on the use of assets around the Council's estate.

Streetlighting emissions increased by 20.72%. This was due to an increase in energy consumption of 455,561 kWh between 2022/23 and 2023/24. Officers have been working to understand this increase, which is unexpected given the LED upgrades and part lighting of the borough. Further details are within the Reduce section below.

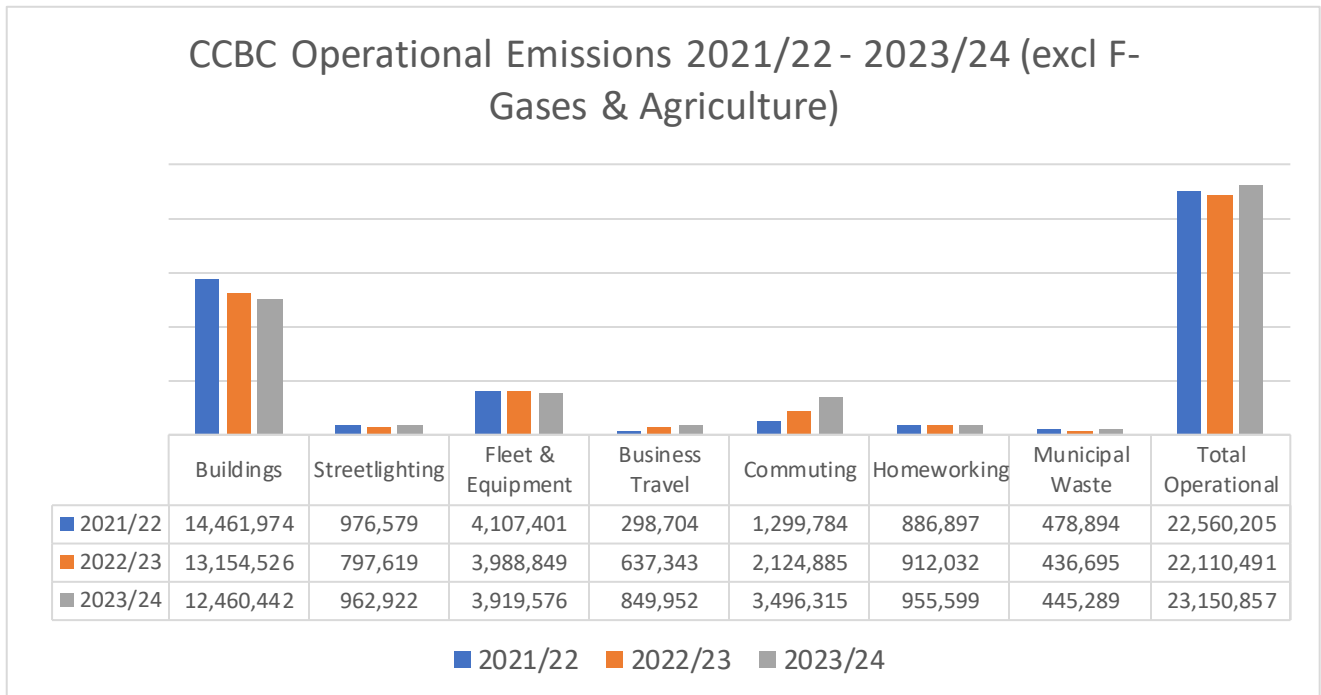


Figure 1, CCBC Operational Emissions 2021/22 – 2023/24

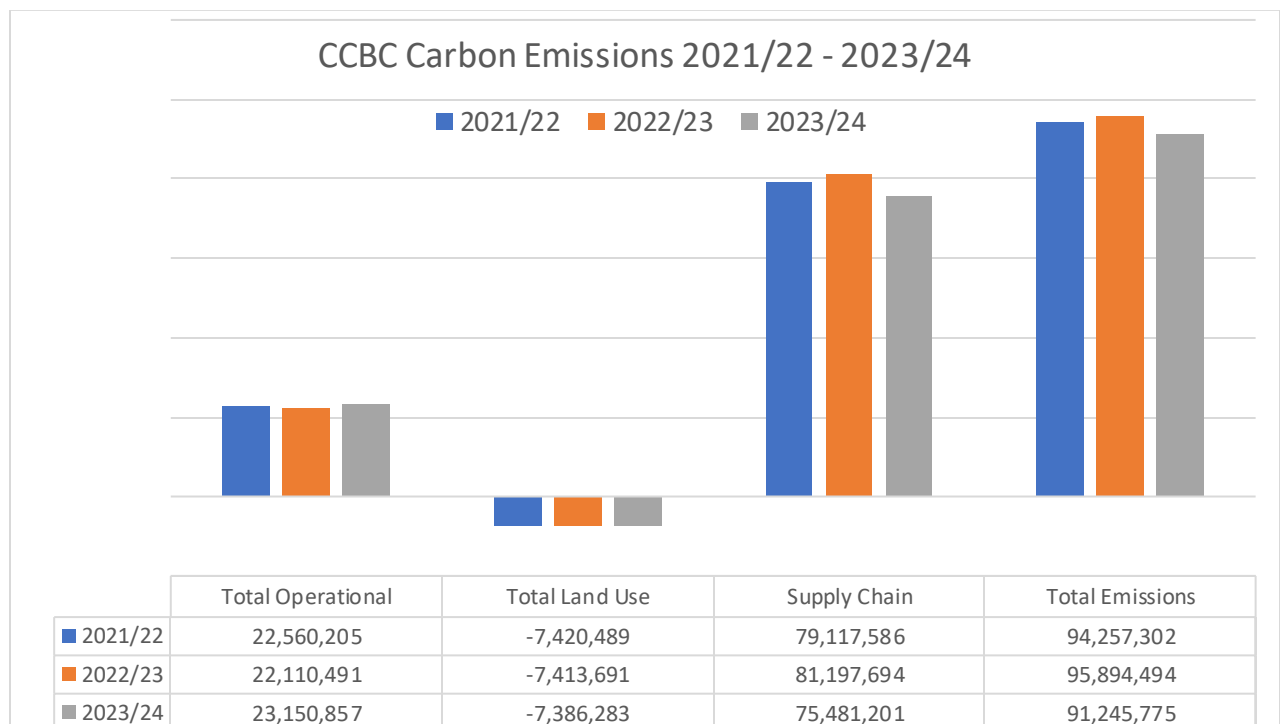


Figure 2, CCBC Organisational Carbon Emissions 2021/22 – 2023/24

Service Area Baselines

Service Area Baselines have been completed for each service area in the Council. This information is visualised in Power BI and is hosted within the Decarbonisation Teams Channel.

The Team have utilised this analysis and data in supporting various projects through the Mobilising Team Caerphilly Programme.

The operational move to corporate landlord, corporate fleet and corporate offsetting models has affected the delivery of this project. Rather than presenting emissions to service areas, moving forward it is strategically more rational to divide emissions by corporate responsibility so that those with the overarching agency over the emissions has the responsibility for reducing them.

This division of emissions does not negate the importance of service area engagement so that all users of assets – whether these be buildings, vehicles, digital assets or other equipment – understand the role that they need to play in reducing emissions. Whilst overall responsibility will be held corporately, all users have an impact and must understand the emissions associated with their use.

Carbon budgets for these areas of corporate responsibilities will be developed in partnership with the respective services and aligned to the Asset Management and Vehicle Replacement strategies.

Carbon Literacy Training

Caerphilly County Borough Council has successfully achieved Bronze Carbon Literate Organisation accreditation with the Carbon Literacy Project. Only two other local authorities in the Cardiff Capital Region are currently accredited. The team would like to achieve Silver Carbon Literate Organisation accreditation – something no other local authority in Wales has achieved. This requires 15% of the work force to become Carbon Literate and so will require a wide internal programme of training.



In total, 40 officers have now received Carbon Literacy Training since September 2023. This training was delivered by an external partner Cynnal Cymru.

To assess the value of the training, the team have followed up with all those who have completed the training. 100% of respondents have said they have made a difference within their work following the training. 94% of respondents have

said that they have also made changes in their personal lives, working to reduce their impact at home as well as in work.

Through this engagement it was made clear that the continuation of a Carbon Literacy programme for the authority would benefit not only the organisational 2030 net zero target but also the wider territorial 2050 net zero target.

The team have been completing further work to develop three Carbon Literacy courses to be accredited by the Carbon Literacy project for delivery both internally and externally.

Working with Cynnal Cymru, we have developed a course specifically for Elected Members and Senior Leaders to build knowledge of the climate emergency, carbon emissions and the role that they play in considering decarbonisation through their decision-making. This course has successfully been accredited by the Carbon Literacy Project and delivery will begin in mid-November.

Working with the Adult Education and Multiply teams, we are developing two Carbon Numeracy courses. These courses aim to improve numeracy through the lens of Carbon Literacy. The first course is Entry Level 3 maths and will be for residents in the community; the second course is Level 2 maths and will be for those in work to include employees of the Council. The second course will be offered and delivered to staff as part of the internal Carbon Literacy Programme. Both courses will be double accredited by both Agored Cymru and the Carbon Literacy Project, meaning that learners can receive two accreditations on completion of the course. This approach to Carbon Literacy, first coined within the Infuse programme, is truly innovative and has been identified by the Carbon Literacy Project as a novel approach.

Developing understanding of Carbon Numeracy alongside Carbon Literacy will enable officers to begin to gauge the emissions impacts of their proposals, projects and procurements which will benefit decision-makers in their assessments of options.

Carbon Literacy is just the first step in building a workforce within the organisation that has the requisite understanding and skills to facilitate a just transition to net zero. The team have worked with Workforce Development to include climate change training within the upcoming launch of a new e-learning platform available to staff.

Further mapping of skills across the organisation has not yet started. However, through SPF funding of green skills, employees have been directed to training by the employability team, with 181 learners registered on the green skills database.

Decarbonisation in Decision-Making

The Decarbonisation Team have been proactively raising the complexities of incorporating decarbonisation into decision-making processes both internally and externally with the WLGA, Welsh Government and others. Given the more difficult

financial situation that the Welsh Public Sector finds itself in, it is harder to make a business case for projects that have a decarbonisation benefit but not a clear financial benefit.

As outlined in the introduction, carbon considerations are now being included within the business cases of projects through the MTC programme. Alongside this, wider sustainability and environmental impacts should also be considered within the IIA section for the Wellbeing of Future Generations Act goal of a Globally Responsible Wales. Through a review of the current IIA, these considerations could be bolstered to deepen the requirements to consider decarbonisation and the wider impacts of decisions, policies and projects within the organisation.

There exist various tools to help estimate or calculate the emissions associated with projects and/or spend – mostly focused on the built environment and embodied carbon – and to help assess projects and/or spend in relation to their carbon impacts. The WLGA, in collaboration with Miller Research, and The Tyndall Institute in collaboration with CAST have both developed tools to support local authority decision making within procurement processes that consider carbon impact and co-benefits. Internally, through the Buy Group, the team have reviewed a variety of the tools available and have begun the process of assimilating these into the procurement cycle.

Whilst these tools are a method of identifying benefits, they do not improve the financial viability of a project that will reduce carbon emissions.

Currently, there is no value within carbon reporting for completing ambitious mitigation projects such as building a solar farm or a 21st Century School. A public sector organisation spending £14 million on building a solar farm, is adding £14 million worth of carbon onto their footprint. And if this solar farm is built without a Private Wire, current reporting will not allow the organisation to receive the benefit of the renewable energy generated by the project, despite contributing to the decarbonisation of the local energy mix and reducing territorial emissions.

Currently purchasing trees has a negative effect on the carbon footprint of organisations and the positive carbon sequestration cannot be recognised for 20 years within the land use section of the report. For example, planting 17,000 trees at Parc Cwm Darran this year has added 24,814 kgCO₂e onto the organisation's footprint. Changing the use of the land from Grassland to Forestland effectively adds an additional 10,000 kgCO₂e to the organisational footprint. In total the organisation is adding 35 tonnes of carbon emissions to the organisational footprint for the completion of just one planting project in the first year and then 10 tonnes of carbon for the next 19 years until the previous land use no longer applies. This is incompatible with net zero 2030 ambitions for the public sector.

Welsh Government Energy Service (WGES) took over the contract for the Welsh Public Sector Net Zero Carbon Reporting from Aether and through this, the team

have lobbied for a review of the reporting methodology to show the benefits of projects that reduce emissions.

Through lobbying with Welsh Government and the WLGA, the team have been interviewed by Grant Thornton in a research project commissioned by WG that is reviewing how local authorities include carbon considerations in business cases to identify where there are gaps.

The team have contributed further to research being completed by Welsh Centre for Public Policy, in the hope to inform their forward work programme.

Mobilising Team Caerphilly

The Decarbonisation Team have been supporting various projects through the MTC Transformation and Placemaking programmes.

The Decarbonisation Team presented a stand up in July 2024, introducing and explaining the importance of decarbonisation alongside the impacts of inaction. This stand up was well received and has led to an increase in engagement with services and project teams on the work they are completing through the MTC programmes.

The inclusion of decarbonisation considerations within business cases has meant that the team have been tasked with understanding baseline emissions for various services and projects. The team have also helped with modelling emissions scenarios to support options appraisal.

Alongside the initial Assets Efficiency workstream, the team have provided data for:

- Library Review
- Home to School Transport
- Leisure Review
- Parks Review – Bowling Greens
- Tourism Review
- Data Centre
- Waste Strategy
- Caerphilly Leisure & Wellbeing Hub
- MFP & Printing
- Building Cleaning
- Third Party Spend

The team have been central to the Fleet Review – this is discussed in further detail below.

Reduce

Through the delivery of services the authority will emit carbon. Whilst emitting some carbon is unavoidable, reducing the quantity of carbon emitted as much as possible is vital to achieving Net Zero Carbon.

The Decarbonisation Strategy recognised that reducing operational emissions through reducing energy consumption is imperative. The identified targeted areas for action are:

- Existing Buildings – Corporate and Domestic
- New Developments – Corporate and Domestic
- Streetlighting
- Travel & Transport
- Waste Management

The nature of this work has meant that the Reduce section of the Decarbonisation Action Plan is the largest, crossing many services and existing work streams.

The Reduce working group and other stakeholders have reviewed the previous Action Plan, revised and agreed the Reduce section for 2024 into 27 actions (See Appendix 2).

Of these actions:

- 5 are completed
- 10 are going well with good progress
- 7 have had reasonable progress
- 5 have made poor progress

Corporate Buildings

Details of the carbon emissions from energy consumption across the estate are detailed in the table below. In total there has been a 6% reduction in emissions from energy consumption from 2022/23 to 2023/24.

| Site Group | 2022/23 | | 2023/24 | | % Change |
|---|--------------------------------|------------------------|--------------------------------|------------------------|------------|
| | Electricity Emissions (kgCO2e) | Gas Emissions (kgCO2e) | Electricity Emissions (kgCO2e) | Gas Emissions (kgCO2e) | |
| Catering & Cleaning | 36.36 | 1,309.83 | 1,618.10 | 1,279.69 | 115% |
| Cemeteries | 17,033.97 | 4,030.53 | 17,010.22 | 3,992.73 | 0% |
| Youth Centres | 19,837.78 | 56,290.72 | 31,039.05 | 51,771.66 | 9% |
| Corporate Offices | 931,100.74 | 691,052.12 | 724,672.86 | 577,145.47 | -20% |
| Tourism | 146,049.26 | 149,056.63 | 157,392.74 | 153,823.64 | 5% |
| Leisure Centres | 505,678.68 | 1,096,007.38 | 486,148.49 | 992,237.37 | -8% |
| Libraries | 90,536.06 | 138,886.51 | 98,404.61 | 141,224.15 | 4% |
| Clocks & Memorials | 3,116.37 | 0.00 | 3,285.39 | 0.00 | 5% |
| Economic Development | 52,620.46 | 0.00 | 55,553.76 | 0.00 | 6% |
| Miscellaneous | 43,564.55 | 168.35 | 43,333.23 | 6,979.23 | 15% |
| Depots | 91,813.99 | 71,837.30 | 58,247.10 | 111,846.14 | 4% |
| Pavilions | 157,324.94 | 73,613.93 | 170,885.04 | 82,815.77 | 10% |
| Corporate Estate excl Sch & SS | 2,058,713.16 | 2,282,253.30 | 1,847,590.59 | 2,123,115.85 | -9% |
| Social Services | 240,680.14 | 808,286.86 | 250,551.93 | 787,734.19 | -1% |
| Schools | 2,148,482.07 | 5,607,080.29 | 2,240,498.26 | 5,166,085.38 | -4% |
| Total | 4,447,875.37 | 8,697,620.45 | 4,338,640.78 | 8,076,935.42 | -6% |

Table 3, Energy Emissions breakdown for non-domestic buildings 2022/23 – 2023/24

Further analysis has been completed of site-specific data within Corporate Offices, Leisure Centres and Schools to understand the reductions in emissions.

Within Corporate Offices reductions in emissions are due to site closure, energy saving works specifically within the Tredomen House Data Centre, metering issues and general reductions in the use of the buildings. The 20% reduction in corporate office emissions highlights the benefits of the ongoing decarbonisation of our assets through fabric improvements & rationalisation and the improved efficiency of services that operate within them.

Within Leisure Centres reductions in emissions are due to a decrease in site usage – namely Pontllanfraith Leisure Centre which was previously being used as a Covid vaccination centre – and reductions in consumption through measures such as more efficient pitch lighting installed at the Centre of Sporting Excellence. The 8% reduction in emissions highlights the importance and the impact of relatively small interventions such as lighting.

Within Schools, there was a wide range of variations from big reductions in emissions to big increases in emissions. Alongside this there are a variety of reasons for these fluctuations. Where emissions have increased, this is mostly due to ongoing building works, new installations and metering issues. Where emissions have decreased this was due to rectification of metering issues, site closure and consumption reduction through improvements such as LED lighting and repairs or improvements to building fabric. The 4% reduction in emissions within schools further reinforces the importance of energy efficiency works within the buildings.

Where emissions have increased across other site groups, this has been due to increased usage of the sites, the introduction of 'welcome spaces', building works and metering issues.

Following a review of the existing ground source heat pumps at Ty Penallta it was determined that replacements were required to ensure the continued function of the heating system. Through the installation of heat pumps and borehole pumps, the heating system can not only substantially reduce costs but also reduce carbon emissions. Upgrades to the ground source heat pumps at Ty Penallta were successfully installed over 2024 to transition the building from gas boiler heating and the project is currently in commissioning phase. Through the installation of borehole pumps, the performance of the heat pumps is expected to dramatically improve, leading to lower energy consumption requirements to provide heating. Using current electricity emissions factors, there is forecasted to be a reduction in emissions from ~221.7 tCO₂e to ~84.5 tCO₂e – a reduction of 137 tCO₂e annually. As the grid decarbonises, these emissions will reduce further, leading to heating and energy consumption within Ty Penallta to be zero emission.

Reporting to the Reduce Working Group, the Energy team have continued their work compiling data on the corporate estate to identify the priority sites for intervention

alongside the required interventions and costs. High level estimates of the costs and the required numbers of projects have been compiled and work is ongoing to sure up these estimates so that the programme can be designed and enter delivery.

Through WG funding, site surveys have been completed at 3 of the authority's care homes to provide cost estimates of the work need to decarbonise the buildings.

Using these cost estimates as a benchmark, it is clear the decarbonisation of the estate will require significant investment of resources and capital expenditure. Whilst there are funding streams available, for example through SALIX and WG Low Carbon Heat Grants, these will not cover the entirety of the costs, and it should also be noted that there will be interest rates applied to future SALIX funding pots. The Building Decarbonisation Programme is considerably behind schedule meaning that previous opportunities for Welsh Government grant funded upgrade works have been missed and future opportunities may be jeopardised.

Whilst schools have been included in the above costings, there is also a complimentary capital maintenance programme which is overseen by the Council's Sustainable Communities for Learning Team in partnership with Building Consultancy. This programme is not de facto focused on decarbonisation projects within existing school buildings, but a substantial percentage of the capital investment does contribute to the decarbonisation of the buildings by improving the fabric, energy efficiency and heating systems of the schools.

Asset Management Strategy

Cabinet approved and adopted a new Asset Management Strategy for 2025 – 2030 in October 2024.

A key objective of this strategy is to create a Smaller, Greener, Smarter estate. This is aligned to the principles of the Decarbonisation Strategy with a key focus the development of a route map to decarbonise the estate by 2030.

The strategy pulls together multiple elements of the Decarbonisation Action Plan in the pursuit of this objective: Asset Efficiency, Agile Working, Community Asset Transfer and Asset Rationalisation. Delivery of these elements will be driven through the implementation of the Corporate Landlord model. Action will be steered through the Asset Management group, alongside the Building Decarbonisation Programme which is managed through the Reduce Working Group. The delivery of these workstreams to decarbonise the estate will require significant resources, both capital and revenue, to bring together the learnings, assess each building's fabric, current & future use and plot a route forward.

Corporate Landlord Model

Through the implementation of the Corporate Landlord Model, the space allocated to a service will be professionally reviewed and agreed upon with the service to ensure that it is both sufficient and suitable. This builds on the successful model developed

with social services. Services will no longer have the notion of ownership over sites within the corporate estate leading to more independent and objective decisions. Centralising budget and decision-making presents an opportunity to deliver:

- Financial Savings
- Carbon Savings
- Capital Receipts
- Revenue Income
- Social Value
- Economic Development Opportunities

This transition is not straightforward and will depend on consultation and engagement with service areas alongside a wider cultural shift.

Community Asset Transfer

The CAT policy was reviewed through Mobilising Team Caerphilly and deemed fit for purpose. The team worked to refresh the organisation's approach to CAT maintaining communities at the heart of the council's operation to empower them whilst seeking to reduce the financial and operational burden on the council of specific sites.

Our refreshed approach aims to proactively identify opportunities for the appropriate organisations to take management responsibility of assets by:

- (i) Streamlining our processes to make them more accessible.
- (ii) Identifying more resource to promote and progress opportunities.
- (iii) Design a comprehensive support programme to guarantee the effective management of transferred assets and share good practice.

Furthermore, it could potentially lead to cost savings for the council, freeing up resources for other critical services. However, it's important to ensure that communities are adequately supported and equipped to manage these assets effectively, to ensure the sustainability of services and the continued benefit to the community. This approach aligns with the council's commitment to putting communities at the heart of its operations and the broader principles of sustainable development and local empowerment.

The first three schemes have been released for Community Asset Transfer:

- (i) Hafod Deg
- (ii) Tredegar Park Toilets
- (iii) Land at Dan-y-Graig

The deadline for expressions of interest was the 30th October.

Asset Rationalisation

Throughout the previous year, our organisation has undertaken an extensive evaluation of our corporate properties. This strategic analysis resulted in the

integration of multiple outlying offices into the central Ty Penallta location. The consolidation is part of an ongoing initiative managed by the Corporate Landlord function, which is dedicated to enhancing operational efficiency and reducing overhead costs. The initiative is set to continue, with a proactive approach to uncover further fiscal savings and operational improvements across our corporate estate.

Caerphilly Homes - Existing Housing

CCBC has 10,682 homes which represents ~13.8% of all households within the county borough (2021 Census Data).

The Welsh Housing Quality Standard (WHQS) 2023 is an updated standard which details the standards required for the maintenance and improvement of social housing in Wales. There is a focus within this standard on decarbonisation including energy efficiency improvements and water efficiency.

Caerphilly Homes are working to deliver the requirements set out in this standard to improve the quality of the social housing owned by the council and the lives of the tenants living within them.

Smart intelligence software is awaiting approval to support the modelling of target energy pathways alongside investigating options for outsourcing some of the modelling towards achieving WG targets. This work is continuing alongside the continuous flow of updating EPCs. The team are currently aiming to onboard a consultancy to undertake the task of completing outdated EPCs, whilst internally resource is utilised to update EPCs after the completion of retrofit works.

Through the Optimised Retrofit Programme, Caerphilly Homes have undertaken a fabric first and PV approach in completing two schemes at Maesteg and Oakland to address the cold issues the tenants were experiencing, this is in line with PAS2035 and PAS2030. Installations will include External Wall Insulation, Rooftop PV, Mechanical Ventilation with Heat Recovery, and low energy windows and doors.

58 dwellings were completed as part of the schemes. Maesteg post EPCs have been 50% A rating and 50% high B rating as anticipated. Oakland post EPCs have not yet been completed.

Caerphilly Homes will continue to monitor and evaluate the properties using the environmental sensors installed during the retrofit to ensure the individual dwelling are reacting positively to the retrofit measures installed and provide a healthy environment for the residents.

Additionally, 156 dwellings will undergo rooftop PV installations with roof renewal to the majority due to damage and age of the roofs. The expected completion date for these schemes is 31st March 2025 and it is anticipated that post EPCs will result in a B rating.

A third scheme was undertaken to renew the defective existing External Wall Insulation of the 34 dwellings in Panside, in conjunction with energy efficiency measures as appropriate taking a whole house approach. Unforeseen structural works due to weathering damage has caused delays to the project. Post completion EPCs are expected to achieve a B rating.

In Bryn Carno, 86 properties in total, including 36 Council properties are undergoing an EWI replacement scheme to reinsulate homes following the inherent design weaknesses and aspects of poor workmanship of a previous WG funded and externally managed scheme. WG are funding the work to privately owned properties and, though not responsible for the design and scheme management of the original project, Caerphilly Homes is funding work to its stock and taking the opportunity to also install PV panels. The scheme commenced on site in early 2024 with full completion planned for Summer 2025. The scheme is being delivered in accordance with PAS2035 and will achieve an A rating.

Through the triple glazing replacement window programme 90 properties have so far been completed this financial year with a target of 200 by the end of the financial year. Windows have been both manufactured internally and outsourced to support the delivery of the programme.

Fleet

| Fuel | Emissions (kgCO ₂ e) | | % Change |
|--------------|---------------------------------|---------------------|--------------|
| | 2022/23 | 2023/24 | |
| Diesel | 3,908,822.62 | 3,901,842.20 | -0.18% |
| Electricity | 473.41 | 8,945.71 | 1789.63% |
| Total | 3,909,296.03 | 3,910,787.91 | 0.04% |

Table 5, Breakdown of Fleet emissions from Diesel and Electricity 2022/23 – 2023/24

It is important to note that when looking at the emissions from the fleet, an increase in emissions from electricity is a positive sign that the fleet is transitioning to Electric Vehicles (EV) and this will reduce the operational emissions overall. Despite the fleet consisting of more vehicles than the previous year, diesel consumption is down and a 1790% increase in EV usage has resulted in only a 0.04% increase in overall emissions. As EV usage increases, emissions will fall, further supported by the decarbonisation of the grid which will reduce the emissions from the electricity used to charge the vehicles.

Fleet Overview

As of September 2024, a total of 557 vehicles made up our fleet. This number represents a slight increase when compared September 2023 but still a significant decrease from the highs of over 620 in the summer of 2020. It should also be noted

that there are small daily variations due to short-term spot hire vehicles being on-hired and off-hired on a daily basis. 2024 has been a year of many challenges and much change for the fleet service including the swapping out of around 280 vehicles over the past 12 months due to Specialist Fleet Services (SFS) arrangements. This has resulted in some temporary measures being put in place and the decarbonisation team is now working with the Fleet Managers to review the current situation so that we can continue the fleet reduction over the coming months.

There has also been a change in the breakdown of the fleet with an increase in hired vehicles to replace the vehicles returned to SFS at the end of their individual lease periods.

The 557 vehicles are made up of 86 vehicles that we own, 54 vehicles on long term lease (generally 5 years) with SFS and 417 vehicles on short-term spot hire. As we are not committed to contract dates with spot hires, we will be looking to off-hire where possible, as soon as possible.

The graph below shows the total number of vehicles in our fleet over the past 6 years and how this breaks down between owned, leased and hired.

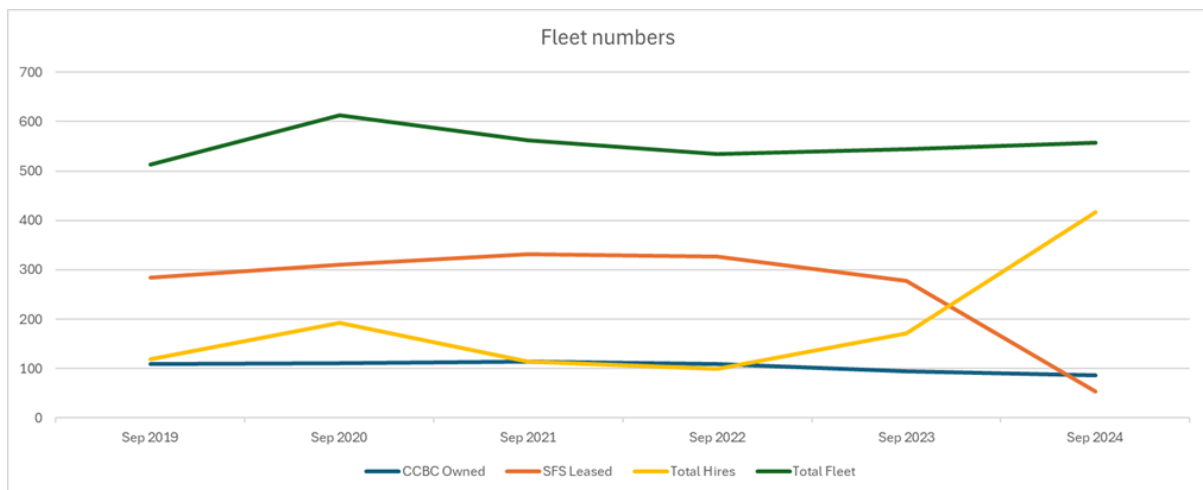


Figure 3, Details of numbers of vehicles owned, leased and hired between Sep 2019 and Sep 2024

We now have 19 fully electric vehicles in the fleet.



Electric van used by Caerphilly Play and Sports Caerphilly

Fleet Challenges

At the end of 2023, the Fleet service area was facing some considerable challenges. The Fleet Manager was due to retire at the end of December and a decision had been taken not to renew the managed service arrangement with SFS for vehicle provision beyond the end-of-January 2024 review date. This decision, whilst seen as beneficial for CCBC in the long-term, brought with it some short-term difficulties which included the return of all vehicles where end of contract dates were due. Previously, it had been possible to negotiate lease extensions in many cases.

Against this backdrop, and as a result of other issues, a Fleet Service Review was established as part of the Mobilising Team Caerphilly (MTC) process.

From a fleet decarbonisation perspective, it became clear that, until these core issues had been addressed, it would not be possible to progress the decarbonisation agenda in a meaningful way. Therefore, the Decarbonisation Team has sought to provide support for this process through 2024 ensuring that fleet decarbonisation is central to the fleet review agenda and helping the fleet service reach a point where it can move forward providing fleet services with decarbonisation at the heart of future plans.

Mobilising Team Caerphilly – Fleet Review Work

The MTC Fleet Review process was established to address the concerns and issues faced by the service and set out the future direction of the fleet service that would enable it to deliver a safe, efficient, reliable and low carbon fleet for CCBC and its residents.

The project has completed the 'Discover' and 'Define' stages and is about to enter the 'Outputs' stage following agreement of a business case.

The decarbonisation team has been central to the review process, undertaking many tasks and making a valuable contribution to all aspects of the project. The following paragraphs highlight some of the main work areas it has taken on as part of the project, but it has also helped in many other ways. These include contributions to discussions and the decision-making process and providing bespoke data analysis when required. It has also been fully involved in the various workshops that has provided the basis for the business case.

Vehicle Renewal Strategy

The Fleet Review identified the need for a Vehicle Renewal Strategy. CCBC did not have one in place which meant that there was a lack planning for the replacement of vehicles that were old and expensive to maintain. Also, the processes for acquiring and disposing fleet vehicles needed to be tighter with more structure and accountability. This included asking questions relating to need for the vehicle, size of the vehicle, sharing/pooling options, Ultra Low Emission Vehicle (ULEV) options, etc., which help to drive forward the fleet decarbonisation objectives. This has now been drafted and is currently under consultation.

Vehicle Use Review with Service Areas

As part of the Fleet review, there was an engagement exercise with each service area individually to discuss vehicle use including opportunities to lower carbon emissions. This was done in the form of a questionnaire that asked about the way the vehicle was used to deliver services, vehicle details, mileage, peak times and quiet times, opportunities for reducing the number of vehicles, vehicle sharing and pooling and opportunities to transition to ULEV. The responses to the questionnaire have been collated and are being used to help decarbonisation plans as we move forward.

Through vehicle use review with Housing, changes have been made to how the workforce for repairs operate, with a new North, South, East, West split to prevent operatives from travelling the length of the borough to complete jobs. Alongside this, operatives have been linked, as far as is practicable, to the area in which they live to further a reduction in travel. Whilst we have not seen the impact of these changes in our emissions reporting within this report, due to reporting in arrears, we expect to see the positive result of these actions culminate in emissions reductions within the next reporting cycle.

2024/2025 ULEV Grant

In September, Welsh Government announced the 2024/2025 opportunities for ULEV grants. The information collected from the Vehicle Use Review, mentioned above, is being used to inform our application where we are hoping to secure gap funding for a number of electric vehicles (i.e. the difference in price between an electric vehicle

and a combustion engine equivalent). The details are being worked through but there are significant longer-term savings to be made if we can access these grants. We will still need to find the funds for the basic vehicle cost, however, and work is underway looking at how that can be made available.

WG Central Purchasing for vehicles and infrastructure

As well as the Welsh Government (WG) ULEV grants that have been made available on an annual basis over recent years, WG is looking to support local authorities with other initiatives including a central framework to support vehicle purchase and a separate one for EV charging installation and associated issues (surveys, consultancy, design, use of renewables, etc). There are other options that are also under consideration. The Decarbonisation Team has been involved in workshops and discussions regarding these initiatives to help to shape the provision being offered.

Cardiff Capital Region Challenge Fund

CCBC secured funding from the Cardiff Capital Region Challenge Fund to run an innovation project looking at ways to effectively transition to electric vehicles and manage an electric fleet. This includes rationalising the fleet to gain the greatest advantages from a move to EV, managing vehicle charging requirements and providing suitable charging infrastructure.

Building on the work done on the project in 2023, which included a 10-week initial investigation exercise using actual fleet data from the Quartix tracking system and provided an initial assessment of the task in hand, the following outcomes and observations have been established in 2024.

As a result of this work we now have a much greater understanding of our fleet including vehicle utilisation based on real data. We have a better understanding of how we can assess the way our fleet vehicles are being used and opportunities to make reductions in both cost and carbon. We have a clearer idea of where can reduce the number of vehicles, reduce the size of vehicles and move to ULEV alternatives. Just as important, we have a greater understanding of how we can use data-driven decision processes to achieve this goal.

Waste Strategy

The updated Waste Strategy is introducing a new way of collecting waste within the borough. With this new strategy, the council is looking for a new site to serve as a depot for waste vehicles. The Decarbonisation Team have been part of the working group assessing suitable sites to ensure that the transition to ULEV (Ultra Low Emission Vehicles) is supported within the move to a new depot. The team have contributed to modelling to ensure that there is capacity at the site to be able to install sufficient EV infrastructure and have sufficient maximum demand through the national grid to be able to charge a fleet of ULEVs.

EV Infrastructure

In January 2024, the Welsh Government introduced a grant funding initiative to support local authorities with the costs of introducing ULEVs into the fleet. The deadline for accessing this support was the end of the 2023/2024 financial year. CCBC secured funding for 8 x 7.4kW EV charging installations at Waunfawr Park, Bedwas Depot, Tredomen House, Penallta Visitor Centre. We have taken delivery of the chargers and work is underway to get them installed in the designated locations.

This infrastructure will be added to our existing EV charging infrastructure which currently provides the charging capacity for around 100 fleet EVs. The breakdown is as follows:

- Ty Penallta charging hub – 15 double 7kW chargers.
- Tir y Berth charging hub (old Meals on Wheels site) 7 double 7kW chargers.
- We now have a total of 53 charge points on the CCBC charging network
- This work includes the setting up of the back-office system to manage the charging network, monitoring of charge sessions (including electricity use and CO2 savings) and, where necessary, internal recharging.

Alongside this we have continued with the staff/visitor personal vehicle charging system that allows those individuals who choose to charge their vehicles at a CCBC site and pay for the electricity used. The tariff covers the electricity and administration costs only. This work includes the provision of all relevant policies, notices, instructions and compliance practices.

Grey Fleet Mileage

Grey fleet mileage has consistently increased since the low levels seen during Covid. This is a result of teams returning to a quasi-pre-covid way of working. For the operation of the organisation, grey fleet is unavoidable in the delivery of our services. However, how this mileage is travelled can be affected to reduce emissions.

Through the CCR Challenge Fund Project, students at Cardiff University Data Science Academy have analysed mileage data from the Home Assist and Reablement Team to identify if there are opportunities for emissions reductions through improved routing and zoning. Students were also asked to identify possible locations for EV pool vehicles to be situated for use by the team. The final dissertations of these studies have just been received by the Decarbonisation Team and will provide a useful data baseline from which to further conversations with the HART team to reduce emissions from their operations.

Outside of this work, the Decarbonisation Team have set a priority for next year to delve further into grey fleet mileage and identify opportunities for reduction, including the introduction of a travel hierarchy and the possibility of pool vehicles. The WLGA have commissioned Miller Research to develop a tool to assist local authorities with reducing grey fleet emissions which the Decarbonisation Team will look to incorporate into this process.

New Development – Housing & Non-Domestic Buildings

Housing

The Council continues to deliver against its commitment to deliver 1000 new, affordable, low carbon homes by 2033. The commitment to deliver new, affordable, low carbon homes that are energy efficient and lower fuel costs for customers is outlined in the Council's Caerphilly Homes Development and Governance Strategy. Construction of the 45 later living homes at Ty Darran Risca has begun with an anticipated completion date of Autumn 2025. Ground was broken at Oakdale Place development of 92 flagship low carbon mixed tenure residential homes with an anticipated completion date of Spring 2026.

Castle Court, Bargoed, Trethomas and Risca are all part of the next phase of the development programme with outline planning imminent for Trethomas and full planning scheduled to be submitted prior to Christmas 2024 for Castle Court, Crosskeys and three sites in Bargoed.

The development programme is currently in excess of 30 sites and delivery is anticipated to be phased over the next 10 years. Caerphilly Homes priority is the delivery of energy efficient, compliant homes which reduce energy costs for the customers.

Non-Domestic Buildings

The Decarbonisation Team have engaged with the consultants designing the Caerphilly Leisure and Wellbeing Hub to ensure that decarbonisation considerations and sufficient project data collection is embedded at early stages of the project development. Through meetings with the consultants, the Decarbonisation Team are building a good understanding of the availability of emissions data through larger construction projects which will inform how the spend for these projects is reported to Welsh Government in future. The team have reinforced the importance of considering the full life cycle of the building in understanding the impact of the construction, in particular in regards to options for powering and heating the site.

Sustainable Communities for Learning

The Sustainable Communities for Learning programme is a collaboration between the Welsh Government and the Local Authority. It is a long-term strategic capital investment programme with the aim of creating a generation of 21st Century Schools. The Minister for Education and Welsh Language announced on 2 November 2021 that from 1 January 2022 all new-build, major refurbishment and extension projects requesting funding support through the Programme will be required to demonstrate delivery of Net Zero Carbon in operation plus a 20% reduction on the amount of embodied carbon – that is the carbon emitted through construction materials and the construction process.

Plasyfelin Primary School will be the Authority’s first school to achieve Welsh Government’s Sustainable Community for Learning Net Zero School standards, which is currently progressing through the RIBA design stages. All subsequent school build projects within Caerphilly e.g. proposals for Llanfabon Infants School, Ysgol Y Lawnt and Upper Rhymney Primary School will be required to demonstrate carbon reduction techniques and technologies and achieve Net Zero Carbon Operational and meet an embodied carbon target as per below;

- 2022 - 2024 Embodied Carbon Below 800 kgCO2/m2
- 2025 - 2029 Embodied Carbon Below 600 kgCO2/m2
- 2030 - onwards Embodied Carbon Below 350 kgCO2/m2

Streetlighting

| | 2022/23 | 2023/24 | % Change |
|-----------------------|---------|---------|----------|
| Streetlighting | 797,619 | 962,922 | 20.72% |

Table 6, Details of emissions from streetlighting, 2022/23 – 2023/24

The majority of our streetlighting stock has now been upgraded to LED units and we are continuing with the already implemented part-night lighting programme. The increase in energy consumption is in part due to the addition of new housing areas. However, it is thought that this is not sufficient to account for this increase. To note the consumption had decreased by a similar amount from 2021/22 to 2022/23 as it has now increased from 2022/23 to 2023/24.

New housing developments have been adopted, which would increase our annual kWh but not by the substantial amount seen alone.

Officers utilised MET Office data to check for correlation between energy consumption increase and a decrease in sunlight hours as this would cause sensors to activate turning on lights which in previous years may have been off. Data was only available until December 2023, however, it is thought that this change in sunshine hours could help to explain some of the increase in consumption.

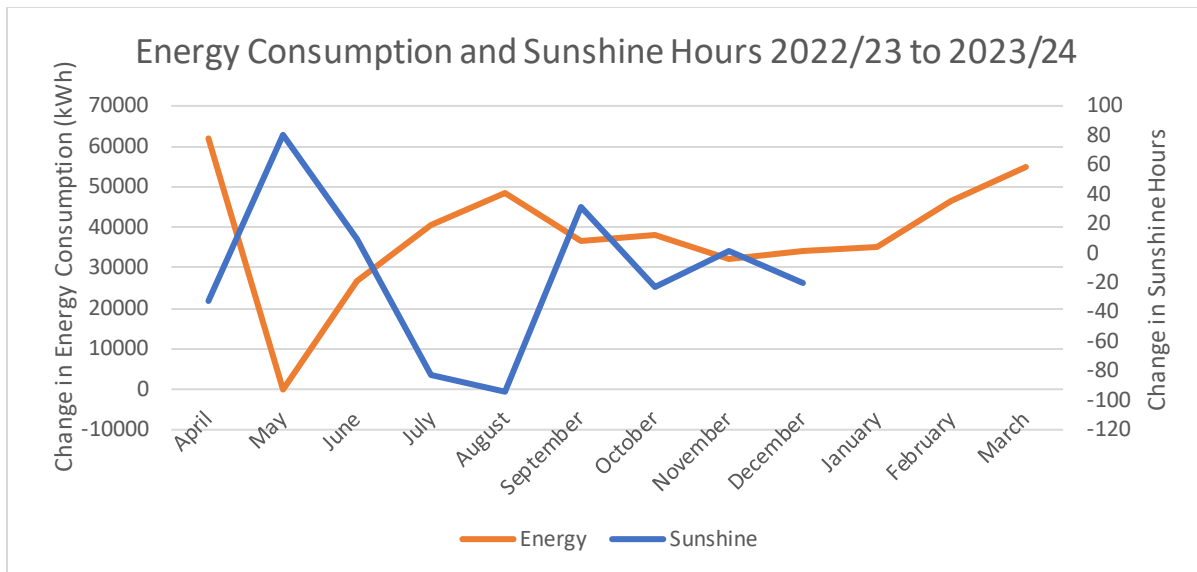


Figure 3, Streetlighting Energy Consumption and Sunshine hours in Caerphilly 22/23 – 23/24

Waste

| | 2022/23 | 2023/24 | % Change |
|------------------------|---------|---------|----------|
| Municipal Waste | 436,695 | 445,289 | 1.97% |

Table 7, Details of emissions from municipal waste collection 2022/23 – 2023/24

Carbon emissions from all waste collected or created by the authority is reported to Welsh Government through the Public Sector Net Zero Carbon reporting. Currently, municipal waste is reported alongside commercial and industrial waste collected by council vehicles. There is the opportunity to report on Organisational and Project waste. However, currently this data is not available for reporting.

The Waste team have implemented multiple programmes this year in a bid to reduce waste created within the authority and improve the quality of the waste received to reduce recycle contamination.

Dry recycling collections from the kerbside are helping the council to recover significant tonnages. Caerphilly are currently the third highest collector of dry recycle in the country and the recovery rate is in the top performing quartile.

They have implemented pre-sort requirements at HRCs for residual waste and resurrected existing kerbside residual waste restriction policies. 5 out of the 6 of our Household Recycling Centres are performing in the upper reaches of the national league table. The new Pre-sort stipulations at site have led to gains in wasting less and recycling more.

Food waste collection has seen relatively low levels of participation and Caerphilly are currently at the bottom of the national performance league table for this element of the waste service. However, the food caddy liner incentive is working well with a clear positive impact on tonnage. During the period January to March 2024 there had been a 11% increase in food waste tonnage compared to the same period last year. The early indications for the period April to May is that the increase is 25%. This improvement removes this waste from residual waste streams.

| Waste Type | 2022/23 | 2023/24 | %Change |
|--------------------|----------------|----------------|--------------|
| Mixed Recycling | 343,397 | 335,844 | -2.20% |
| WEEEE | 4,990 | 6,964 | 39.57% |
| Landfill | 3,680 | 4,383 | 19.10% |
| Combustion | 36,581 | 49,808 | 36.16% |
| Composting | 23,920 | 24,323 | 1.68% |
| Anaerobic Digester | 24,125 | 23,966 | -0.66% |
| Total | 436,695 | 445,289 | 1.97% |

Table 8, Breakdown of waste emissions by waste disposal stream, 2022/23 – 2023/24

The data above identifies that whilst more waste is being collected, either on the kerbside or at the HRCs, there is more waste going to landfill and combustion than in the previous year. It should be noted that this data only runs up to the end of March 2024 and so the full impact of some of the new schemes will not be realised until the data collection for next year's reporting.

The Reuse shop-Penallta operated on our behalf by the charity Wastesavers is their top performing reuse shop in the region.

The Authority has committed to introducing a complete digital solution for waste. This will include back office and front-line functionality and capabilities that will allow for more efficient and paperless methods of working. InCab will be implemented from 28th October with other operational modules to be introduced in the New Year. Additionally, we have some resident engagement tools planned to be implemented from December this year.

Modelling work undertaken with WRAP as part of the Route Map & Draft Waste Strategy to identify material streams, contamination reduction, performance and carbon impacts, commercial and economic impacts etc. There is more work to be done, but we are well positioned in relation to understanding the benefits and operational impacts of this change.

Workplace Recycling regulations came into force in 2024. The facilities management team have implemented new waste separation measures in corporate buildings to adhere to these regulations and improve separation of waste within Council offices. Behaviour change programmes to improve the use of these facilities are ongoing. Reporting on tonnages of waste types is not currently available for reporting.

Produce

The Decarbonisation Strategy acknowledged the importance of generating our own “green” electricity and heat and also supporting the decarbonisation of the county borough. Local production for local demand will reduce carbon emissions, give greater energy security, insulate us against volatile price fluctuations and could bring the added benefit of offsetting grid demand whilst reducing system losses associated with grid supplied electricity if it is produced at the point of demand.

The Produce Working Group met 7 times between November 2023 and November 2024.

In January 2024, the group reviewed the Produce actions contained within the Produce Action Plan and agreed the continuation of the 13 updated actions from 2023, with 1 additional action added. Action P5 (Rooftop Photovoltaics) has been split into domestic and non-domestic installations. It was agreed that as projects progressed, identification of funding should also be reported on through the action plan and so this was added to the document (see Appendix 2).

Of these actions:

- 5 have been completed
- 4 are going well with good progress
- 2 have had reasonable progress
- 2 have made poor progress

Land mapping and evaluation

The authority has significant land holdings some of which are suitable for green energy. The review of land assets, in collaboration with the Welsh Government Energy Service with a view to identifying opportunities for renewable energy technology, is an ongoing process. The first round of reviews identified several sites which were progress to the next stage and were examined in greater detail to consider issues such as grid connection, planning, etc. This work identified potential opportunities for solar, on shore wind and hydroelectricity generation.

The second phase of the review has now identified a number of sites suitable for private wire, co-location, opportunities for the private sector and collaborations with other public services. Further work is being undertaken on the feasibility of these projects.

Ground Mounted Solar Produce Case Study 1 – Cwm Ifor Solar Farm

Background

The Council was approached late Summer 2019 with a commercial opportunity in relation to a solar farm located on privately owned land at Cwm Ifor, Penyrheol. The proposals were to purchase a grid connection option, and further develop business cases exploring the viability and options for solar farm development.

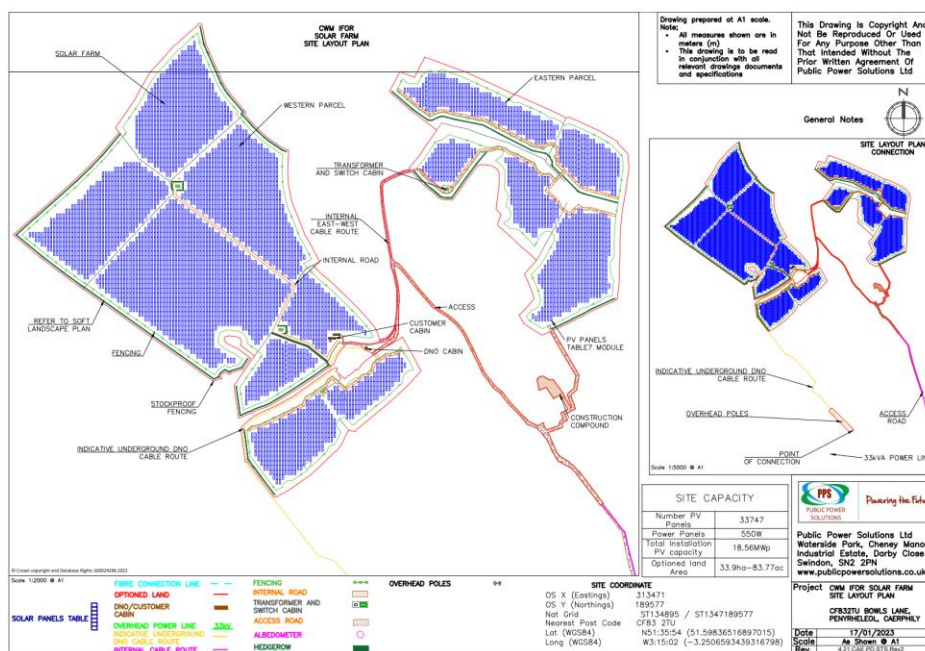
Cwm Ifor land low-grade land used for agricultural purposes. The hill side is steep with south, southeast and southwest facing slopes that is suitable for solar arrays. The project and grid connection were novated in 2020 and there is unlikely to be any limitations on the grid connection. The lifespan of the project is 35 years.

The project supports the Decarbonisation Strategy aim of the authority being Net Carbon Zero by 2050.

The Project

The project is a 20MW solar farm covering 36 hectares and has the potential to be Wales largest publicly owned solar farm. Grid connection is secured, and early ordering of equipment is essential to the project's success. Outline designs have been completed along with energy yield assessments. Financial modelling has been undertaken at the option.

As the solar farm is over 10MW so is a development of national significance, planning has been approved by PEDW. A SAB application is currently under review with the LA. The solar farm will enhance biodiversity of the land and will use native plant species that will also support drainage.



The team includes a number of internal representatives from regeneration, procurement, communications, transformation, property services and finance. As well as external support from planning, landscape and visual and technical consultants, Welsh Government Energy Service, Local Partnerships and the Carbon Trust.

Consultees have included; the Local Planning Authority, Council Ecologist, Council Landscape Architect, Environmental Health, Highways, CADW, NRW, GGAT and the Fire Service. Ward Members, Community Councils and Cabinet have also been consulted along with communities local to the solar farm.

Life-time CO₂ savings are estimated at 55,300tCO₂e are, or approximately 1,580 tCO₂e /year which is enough to power approximately 6000 homes. The electricity generated will contribute to decarbonising the electricity grid. This will have a positive impact on air quality.

Cabinet agreed to sell the Cwm Ifor Solar Farm Project in the open market. This would mean that anyone can come forward to purchase the solar farm including public bodies, community energy groups or the private sector.

There will also be a community benefit fund made available to groups within the area as part of the solar project. This could support community decarbonisation projects as well as wider support for the community. Not only will the project improve air quality and wellbeing it will also bring in a revenue to support council services for the most vulnerable. Community benefits clauses will be included in the sale documents.

Rooftop Photovoltaic (PV)

No new rooftop PV installations were installed over 2024. The installation of rooftop PV is being considered through the Building Decarbonisation Programme managed through the Reduce Working Group. Installations of PVs on council housing stock is detailed in the Reduce section of this report.

693,479 kWh of electricity was generated through installed rooftop PV.

Wind

As part of the phase 2 land asset review, sites have been considered for wind turbine projects. A project has been identified for that would be suitable for the private sector to take forward due to issues around grid connection and a lack of private wire opportunities. This project is ongoing and will develop through feasibility and land agreements. The project has the opportunity to provide an income to the council and to provide community benefits.

Hydro-Electric

The authority has undertaken a review of its capacity to generate hydroelectricity from rivers and streams on Council owned land. To date there is limited opportunity

to progress projects, although Cwmcarn Forest has been identified as offering some opportunity to generate electricity for onsite use at the visitor centre. An initial feasibility study for a scheme at Cwmcarn was undertaken in 2012. A revisit of the opportunity has been undertaken and a more detailed feasibility assessment has concluded. It estimated that a 27kW turbine could be installed onsite, which would produce at least half of the visitor's centre current annual electricity requirements.

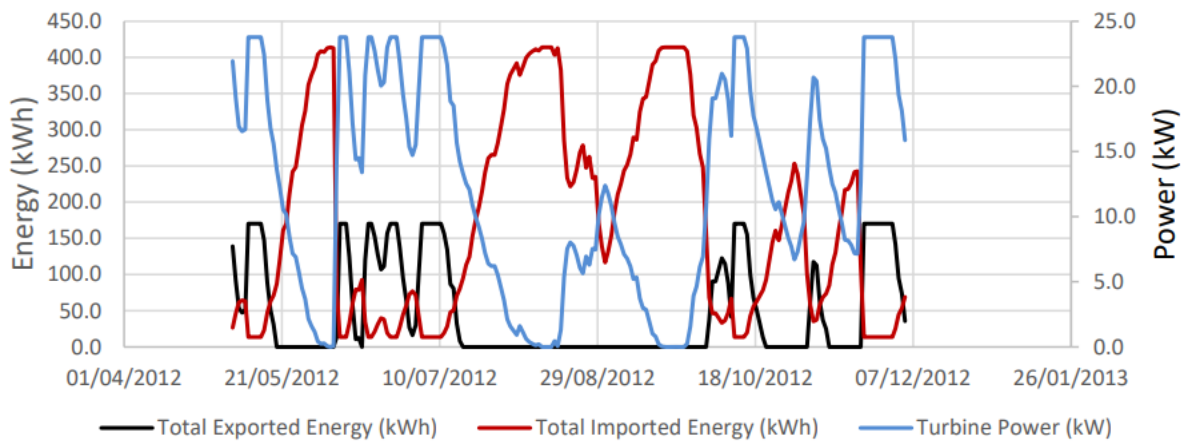


Figure 4, Modelled energy import, export and turbine generation for Cwmcarn Forest Drive

The peak load of the site (maximum energy imported at one time) is 30kW and the base load is 14kW (typically what is being imported overnight). With a 27kW turbine, during times of base load, the excess electricity could either be exported to the grid or utilised onsite by charging electric vehicles.

Financial modelling undertaken has shown the project would be viable with grant funding opportunities in future.

Mine Water

The mine water heat network scheme is in the early stages; however, we are one of the first to engage with the coal authority and WG in this area we are already ahead of others and the mine water scheme at Pontllytyn is progressing through feasibility. CCBC will be in a good position for full funding for the project from WG and is currently in discussion on support available. The coal authority has completed a high-level feasibility and this shows that the Pontllytyn scheme will be a good project as a pilot due to the mine water being at surface. Caerphilly is a hot spot for mine water project potential. A proposal has been drawn up to secure funding support.

Anaerobic Digester

The original Decarbonisation Strategy identified that the Council has local arrangements in place at Bryn Quarry where Council collected food waste is converted into green energy via an Anaerobic Digester. The linked Energy Prospectus highlighted the opportunity to take electricity directly from this site and utilise it at the Council's Tredomen Campus. Anaerobic Digesters (AD) break down feeder fuels such as food waste to generate a biogas which is used to generate

electricity. By utilising a locally generated electricity supply it will reduce the transmission system losses (wasted electricity) and free up additional capacity on the local grid.

The Business case has now been completed. Bryn Group will make the arrangements for the possibility of providing energy through the Private Wire and we will arrange legal agreements including Power Purchase Agreements and Land agreements. Negotiations have begun on Heads of Terms and the principles of any potential power purchase agreements.

Green Hydrogen

Significant work is being undertaken to develop partnerships and to secure funding to investigate the contribution that green hydrogen might play in delivering the authority's commitment to be net zero carbon by 2030 and its wider contribution to regeneration and decarbonisation in the county borough.

Produce Case Study 2 - Green Hydrogen Project

Background

There is much current debate about the role that green hydrogen may have to play in decarbonising energy provision and networks. Work is underway to properly assess the contribution that it may make in helping the authority to deliver its Decarbonisation Strategy. The work will also begin to examine the wider role that it may play in regeneration and decarbonisation in the wider county borough.

Hydrogen is generated by splitting water (H₂O) into its constituent parts, hydrogen and oxygen by electrolysis - passing an electrical current through the water. The term green hydrogen is used when the electricity used in the electrolysis is generated from renewable sources such as wind or solar. The project being developed will also consider the use of ethical water sources by using water from the authority's reed bed facility rather than using "tap water" that would be better used as "drinking water".

The initial feasibility work will be based on a 15MW of solar or wind generation with a circa 10MW electrolyser. After an extensive land asset review, which included internal discussions with Regeneration & Planning, and external stakeholders including National Grid Electricity Distribution (NGED), two initial sites have been identified for consideration on council land. The project takes into account ethical water sources and would use water from the Council owned reed bed facility in Nelson.

The life span of the project would be 20 years and would support the decarbonisation of the larger fleet vehicles owned by CCBC and potentially the other councils within the region and provide a commercial opportunity.

The project supports the Decarbonisation Strategy aim of the authority being Net Carbon Zero by 2030.

The Project

The Hydrogen project could see a 10MW electrolyser sited at one of two potential locations and would use water from the reed bed facility at Coed Top. 15MW of green energy will be needed for the project. This is likely to be a mix of solar and wind. Ideally all green energy will be co-located with the electrolyser however if this is not possible then PPA arrangements for energy through the grid will be made. 15MW of green energy will be needed as there will be a number of ancillaries such as water purification that will require energy on top of what the electrolyser will need.

The reed bed facility currently cleans leachate from the tip and water from the highway gullies across the borough. At present only circa 20% of the water is cleaned through the reed beds, and it is pumped back into the sewer once it is cleaned. The project will use the water allowing for more to be cleaned and will make use of the water rather than discharging into the sewer. We currently paid for the amount and the concentration into the sewer.

There is potential to save 845,000 kg of CO₂ emissions in the borough. A typical household emits ~2.7 tonnes per year on heating, so this is equivalent to 313 houses. A typical car emits ~1.7 tonnes per year, so this is equivalent to ~503 cars. This will impact positively on local air quality.

Opportunities to inject hydrogen into the gas grid are also being investigated along with opportunities for heat networks and oxygen offtake

Funding for feasibility studies has been secured from two funding sources to date. Firstly, UK Government Funding of £72,496 from Innovate UK, for feasibility studies to examine the non-technical barriers to the project, for which CCBC is the lead partner. A second bid for £150,000, for phase 2 of this work is now being prepared. Secondly, £43,768.02 HyBRID funding from Welsh Government for feasibility studies investigating the technical barriers to the project, which is being led by the University of South Wales. A third bid of £150,000 for phase 2 funding from Innovate UK has also been approved, to support communities in understanding how energy projects benefit them and their opportunities in relation to decarbonisation. Phase 2 Hybrid funding has been approved to undertake further analysis of the suitability of the water at Coed Top for Hydrogen. A further study has been offered free by a private company undertaking research.

Welsh Government Energy Service (WGES) are also undertaking feasibility work around green energy and Wales and West Utilities (WWU) around transport hubs.

A funding bid for fleet transition to green energy options has been applied for and is awaiting outcome. This will provide support to create a road map for decarbonisation.

Further DESNZ, CCR, WG funding opportunities will be utilised in future.

The team includes external support from South Wales university, Cardiff University, Challock Energy, Wales and West Utilities, WGES, Jen Baxter Consulting and Prosona. A number of internal conversations have taken place with colleagues from regeneration, procurement, communications, transformation, property services, planning, highways, parks and countryside, environmental health and finance.

Offset

It is inevitable that through delivering its services the authority will emit carbon. Therefore, in order to achieve net zero carbon these emissions will need to be offset. There are two principal ways that this can be done, carbon sequestration (capturing carbon usually by planting trees or by habitat management) or by purchasing carbon units/offsetting credits.

In June 2023, Cabinet made a commitment to have planted 300,000 trees between the approval of the Decarbonisation Strategy and 2030 in aid of the 2030 net zero target.

The Offset Working Group met 10 times between November 2023 and November 2024.

This group meets alongside the PSB Green Spaces Group which has a focus on wider community green spaces schemes and contains membership of PSB partners and others including GAVO, ABUHB, NRW, Keep Wales Tidy and Groundwork.

In January, the Offset Group reviewed and updated the Offset Action Plan. The agreed new Offset Action Plan contains 12 actions (see Appendix 2).

Of these actions:

- 7 have been completed
- 2 are going well with good progress
- 2 have had reasonable progress
- 1 not yet started

Land mapping and evaluation

Land use emissions reporting to Welsh Government has been updated to reflect the ongoing planting programme utilising the creation of a QGIS layer to track tree planting across the borough.

| Land Use Type | Emissions (kgCO ₂ e) | | % Change |
|---------------|---------------------------------|-------------------|--------------|
| | 2022/23 | 2023/24 | |
| Forest Land | -8,306,886 | -8,274,964 | 0.38% |
| Cropland | 880,361 | 875,959 | 0.50% |
| Grassland | 12,835 | 12,722 | 0.88% |
| Wetlands | n/a | n/a | n/a |
| Settlements | n/a | n/a | n/a |
| Other | n/a | n/a | n/a |
| Total | -7,413,691 | -7,386,283 | 0.37% |

Table 9, Details of land use emissions 2022/23 – 2023/24

Due to the time that it takes for trees to begin sequestering carbon, and the carbon released whilst disrupting soil to plant trees, initially emissions from land use will

increase, rather than decrease after planting takes place. As the trees grow, they will begin to sequester carbon and this will then be reflected in the emissions reporting. There are some serious limitations to the current methodology which have been discussed above in the Corporate and Cross Cutting Actions section and which will be revisited in the Business Case section below.

The Offset working group has further refined and agreed a methodology for identifying land areas which may be suitable for offsetting projects to include considerations for other types of offsetting alongside wider environmental, biodiversity and green infrastructure considerations.

Through the Offsetting group, officers have further reviewed Housing, Parks, Engineering and Economic Development sites for potential future offsetting projects. Three Housing sites were identified and ecological surveys were completed. Two of the three sites appear to be suitable and conversations are ongoing over the use of the sites.

Parks have put forward areas of Rhymney War Memorial Park for volunteer planting over the 2024/25 planting season as part of required drainage works for the site. Engineering sites have been reviewed as part of considerations for coal tip maintenance. Subject to the reintroduction of funding for tree planting schemes from Welsh Government, there are potentially suitable tips within the borough. Ecological surveys ruled out Aberbargoed tip for community planting for the 2023/24 season. Through a desktop survey, the Offsetting Group identified 6 potential Economic Development sites. These were discussed with the relevant land holders to get an understanding of future plans for the sites. Two of these sites may have some suitability for planting and further investigations are needed including a site visit to determine accessibility and day-to-day use.



Tree planting programmes

Due to ecological constraints, further planting at Ynys Hywel Farm, in continuation of the Covid Memorial Woodland was not possible over the 2023/24 planting season. However, a replacement site was found nearby at Wyllie and this site in conjunction with an area at Parc Cwm Darran were the main sites for tree planting on council owned land over 2023/24.

Working with the PSB Green Spaces Group, volunteer planting was co-ordinated for both sites over two separate planting weeks in March 2024.

Over 120 volunteers across the two sites braved the wind and rain and planted nearly 3,000 trees. Species included Oak, Hawthorn, Maple, Sycamore, Alder, Birch, Hornbeam, Hazel, Crab Apple, Cherry, Blackthorn and Lime. Species were chosen to reflect local provenance alongside identifying species that will be most adaptable to a changing climate and able to survive the changing conditions.

Volunteers came from the local communities, Council officers, local businesses including Target Financial Services, DS, Kearnes Solicitors, DWP, IG, ONS, CAF Rolling Stock Ltd, Caerphilly People First, Admiral Group, Aneurin Bevan Health Board, RS Group and elected members.

A volunteer commented, "I very much enjoyed it. Thank you very much for the opportunity. The weather was horrible when I went to Parc Cwm Darran and I got so muddy, but I still enjoyed it! Much nicer than being sat at a computer all day! I'm looking forward to next year's planting."

Castell Howell donated refreshments for the volunteers and Robert Price donated a table and water urn which will be stored and used for future planting events.

The team have visited sites of previous planting seasons to evaluate the success of the planting projects. There has been good success in the growth of the trees at both Ynys Hywel sites for volunteer planting. With the completion of the path through the Covid Memorial Woodland, this planting has created a peaceful and reflective green space for residents and visitors to enjoy. Volunteers who contributed to the creation of the woodland are able to walk through the woodland and see the positive impact that their involvement has had on the environment.

Business Case Development

The Offsetting Group commissioned City Science to create a tool that would assist with the business case for tree planting projects by costing planting requirements to achieve net zero emissions. The commission also included a study on the policy and guidance environment for tree planting and offsetting alongside alternative offsetting options.

The tool models emissions reduction scenarios from a 2022 baseline with reductions to 2030 from 60 – 90%. It estimates the residual emissions that would need to be offset in addition to our existing land use sequestration, the amount of land that would be required for planting trees to achieve this and the costs associated with this planting. Costs and emissions can be manually updated to reflect ongoing variations.

This tool estimates that with a 80% reduction in operational emissions (not including supply chain) emissions could be offset by existing land holdings. However, including supply chain emissions, a further ~13,000 tCO₂e would require to be offset – twice the current land holding sequestration. This would require significant investment of over £2 million and the benefits would not be realised by 2030 due to the rate at which trees begin to sequester carbon as they grow.

This assessment raised some key issues for the Group in how they approach the business case for offsetting projects – further details on the development of business cases for decarbonisation projects is above in the Corporate Section of the report. Whichever route taken to reach net zero, an 80% reduction in operational emissions by 2030 is a mammoth task and would require significant annual reductions over the next 5 years.

Following the collaboration on the commissioned study, City Science invited the Decarbonisation Team to further collaborate on an Innovate UK funded project to develop a Nature Investment Land Assessment Tool which will enable local authorities to make best use of land holdings to protect and improve the natural environment.

Total number of trees planted

To date a total of 105,350 trees have been planted since the Decarbonisation Strategy was approved.



Buy

| | 2022/23 | 2023/24 | % Change |
|---------------------|------------|------------|----------|
| Supply Chain | 81,197,694 | 75,481,201 | -7.04% |

Table 10, Details of Supply Chain emissions 2022/23 – 2023/24

The Buy Working Group took a decision to change meeting occurrences so that full group meetings would occur every other month with Decarbonisation and Procurement representatives meeting in between. Between November 2023 and November 2024 there were 4 full group meetings and 3 subgroup meetings. In January 2024 the Buy Action Plan was reviewed and updated. The agreed action plan consists of 13 actions. Of these actions:

- 5 have been completed
- 4 are going well with good progress
- 4 have had reasonable progress

The Spikes Cavell data from 2023/24 has been analysed through the Welsh Government reporting. The top 10 emissions categories within our spend are:

| SIC Category | £Spend | Emissions (kgCO ₂ e) |
|---|---------------|---------------------------------|
| Construction | 54,416,145.20 | 17,080,170.27 |
| Social Care Services | 88,588,303.26 | 13,409,950.68 |
| Road Transport | 15,212,293.34 | 9,175,401.75 |
| Computer, electronic and optical products | 17,161,870.24 | 6,551,533.46 |
| Other manufactured goods | 7,556,715.91 | 5,081,003.49 |
| Glass, refractory, clay, other porcelain and ceramic, stone and abrasive products | 2,575,441.75 | 3,097,940.18 |
| Employment services | 22,713,407.84 | 2,671,737.73 |
| Waste management services | 1,948,149.68 | 3,780,866.39 |
| Other food products | 2,163,546.51 | 1,429,295.06 |
| Architectural and engineering services | 5,986,800.85 | 934,285.29 |

Table 11, Details of top 10 spend categories for emissions within supply chain

This matches the ongoing trend in our supply chain emissions and reinforces the identified target areas for the Buy Group.

| Category | 2021/22 | 2022/23 | 2023/24 | %change 22/23 – 23/24 |
|---|---------------|---------------|---------------|-----------------------|
| Social Care Services | 21,356,253.71 | 11,854,213.70 | 13,409,950.68 | 13% |
| Buildings and building construction works | 16,680,766.07 | 7,474,674.70 | 17,080,170.27 | 129% |
| Computer, electronic and optical products | 10,376,700.26 | 10,896,462.62 | 9,175,401.75 | -16% |
| Employment services | 2,791,127.11 | 2,545,071.48 | 2,671,737.73 | 5% |
| Land transport services | 9,595,793.13 | 6,526,484.61 | 9,175,401.75 | 41% |

Table 12, Details of emissions for supply chain target areas between 2021/22 and 2023/24

Large variances in emissions for construction, or variances within any of these categories, is solely down to fluctuations in spend.

Through this analysis the group has agreed that the target areas for intervention and further work will be:

- Social Care
- Construction
- Food
- IT Products & Services
- Road Transport

The work in these areas is explained further below.

There has been an overlap with the work being completed through the Mobilising Team Caerphilly Programme, namely the Third Party Spend workstream.

The existence of the Buy Working Group has enabled closer collaboration and support for this workstream and the incorporation of decarbonisation considerations into the data.

Through the Buy Working Group, the Decarbonisation Team have also been involved in the MTC Placeshaping programme, in particular the Caerphilly Leisure and Wellbeing Hub and Plasyfelin School as discussed above in the Reduce section of the report.

Service Area Engagement

During the initial stand up for the Third Party Spend workstream, the Decarbonisation Team were invited to highlight the impact of our procurement on the organisation's emissions.

Resources on the basics of emissions reporting have been developed for officers within the organisation who have procurement responsibilities and have been uploaded to the Decarbonisation section of the Intranet. Further resources specifically focused on how to incorporate decarbonisation into the procurement cycle are in development and will be available for all officers in the new year.

The Buy Working Group have identified and reviewed multiple tools for calculating carbon emissions, however, there is no one-size-fits-all approach and the tools available and the quality of those tools and the data derived from them varies from sector to sector. For example, construction and highways tools are fairly advanced due to the carbon literacy of the sectors. However, there are no tools specifically for social care or health services emissions and the resources currently available from the WLGA are more focused on high level statements of intent over accurate data collection. This is due to the complexity of calculating the emissions associated with social care and the infancy of the methodology within that sector.

Financial and carbon footprint data have been integrated to present to the authorities' Heads of Service through the Third Party Spend MTC workstream. The team aim to meet with each Head of Service by the end of this financial year. During these meetings, the team will identify work streams to target cost savings, efficiencies, and reduce our supply chain carbon footprint.

Supplier Engagement

Through analysis of the spend data priority areas have been identified which have informed the supplier engagement and actions of the group.

Social Care

The Decarbonisation Team were invited to present to the council's small residential care providers in February to introduce decarbonisation and the Welsh Government route map to zero for social care. This presentation was well received and stimulated positive conversation about how to begin to calculate emissions.

In 2022, Welsh Government had trialled a social care specific emissions report for local authorities. This reporting tool was a stripped-down version of the full public sector reporting tool and came with no additional guidance. This was not successful, and officers had not heard anything further about next steps. It was agreed that the Decarbonisation Team would develop and pilot an emissions calculator designed specifically for social care, building on the work started by Welsh Government.

A calculator tool has been developed in Excel along with a user guide and guidance on how to complete the report.

Introduction and Organisation Data
This spreadsheet is for an organisation to report their carbon footprint as a supplier to Caerphilly County Borough Council. It is based on the methods described in Welsh Public Sector Net Zero Carbon Reporting Guide.



Organisational information

| | |
|--|------------------------|
| Company name | |
| Year period for reporting | Financial Year 2023/24 |
| Date of report submission | |
| Person responsible for this report | |
| Email address of person responsible for this report | |
| Total number of individuals cared for during this period | |
| Fraction of individuals cared for on behalf of CCBC during this period | |
| Fraction of individuals cared for on behalf of CCBC during this period | |
| Total Full Time Equivalent employees in the company (Optional) | |
| Building Internal floor area equivalent to the energy data reported (sqm) (Optional) | |

Which sections to complete?

If you are unsure about the answers to any of these questions, please leave the section in the tab blank and make a note in the comments section

Do you own or lease any buildings or office space which you use either for the delivery of services/provision of care or for the co-ordination of the delivery of services/provision of care?

Yes - Complete the 'Buildings' tab
 No - You do not need to complete the 'Buildings' tab
 If you own/lease/operate from multiple buildings, please use the 'Multiple Buildings' tab

PLEASE ONLY COMPLETE ONE BUILDINGS TAB

Do you own or lease any vehicles or equipment (such as generators which require diesel/petrol to operate) that are used during the delivery of services/provision of care or the co-ordination of the delivery of services/provision of care? N.B. this does not include personal vehicles used by employees

Yes - Complete the 'Fleet and Equipment' section of the 'Transport' tab
 No - You do not need to complete the 'Fleet & Equipment' section of the 'Transport' tab

Do any employees travel for work using their own vehicles or other modes of transport such as buses or taxis?

Yes - Complete the 'Business Travel' section of the 'Transport' tab
 No - You do not need to complete the 'Business Travel' section of the 'Transport' tab

Do employees commute to a specified place of work e.g. care home or office space?

Yes - Complete the 'Commuting' section of the 'Transport' tab
 No - You do not need to complete the 'Commuting' section of the 'Transport' tab

Do you produce waste during the delivery of services/provision of care which is collected from a premises by a third party e.g. Biffw?

Yes - Complete the 'Waste' tab
 No - You do not need to complete the 'Waste' tab

Report Progress 0.00% 0.00%

Reporting comments

Please provide comments or notes about filling in this report for example if you came across any difficulties or are there any sections missing etc

The Decarbonisation Team, Procurement and Care Commissioners met to discuss the pilot of this tool and it was decided that we should pilot with a cross section of the social care providers. 6 suppliers were identified and engaged, with providers from domiciliary care, supported living and residential care. The providers were given the tool to test in advance of an online webinar in which the Decarbonisation Team presented on the main issues including climate change, its impacts and the complexities of decarbonisation within social care. Through this webinar, feedback on the tool and supporting

guidance has been fed back into the tool.

The next step of the pilot is to record video guidance for the tool to trial with additional providers. Future goals for the tool are that it is used regionally by all local authorities in the South East Wales region to support social care providers in calculating their emissions. This would help providers with a single proscribed tool and methodology for their emissions in reporting to local authorities and develop a baseline of emissions across the sector within the region. Many providers work across the region and so a unified approach would be beneficial not just for providers but also the local authorities within the region.

Further to the development of the emissions tool, through the working group, the Decarbonisation Team and Procurement have collaborated on the inclusion of decarbonisation questions within a recent social care tender. This process highlighted the variation of carbon literacy within the sector. It is clear that larger providers have the resources to be already working on decarbonisation and sustainability. However, smaller, local providers are at the start of this journey and will require extensive support and engagement to assist them with understanding what decarbonisation is and what is required of them in order to decarbonise.

Food Suppliers

Following the award of the contract to Castell Howell, Procurement co-ordinated a meeting between Castell Howell's sustainability team and Decarbonisation to discuss the work that they are doing to reduce their impact and improve the sustainability of their products. During this meeting, Castell Howell's Carbon Reduction Plan was reviewed alongside their wider sustainability and environmental plans. It was a productive and successful conversation which highlighted the ongoing work that Castell Howell are doing to better understand the emissions of the food that they supply. The possibility of pilot projects within the borough, trialling lower carbon food within schools was discussed and the team are waiting to hear further details from Castell Howell on the specific products that they would like to trial and how this would impact the emissions of the products supplied.

EdTech Programme

Caerphilly's IT spend is uniquely high due to the co-ordination of the national Ed-tech programme. This programme is a joint procurement for educational computing and educational products.

Two large suppliers through this programme, Getech and Centerprise were engaged by Procurement to test questions on Carbon Reduction Plans and understand the sector literacy on decarbonisation. Both suppliers supplied Carbon Reduction Plans showing a baseline of emissions that highlight a good understanding of their emissions footprints. The hardest emissions to understand and take action on within this sector are the upstream emissions of the computer components. Centerprise in particular are undertaking some work on understanding these emissions with their own supply chains.

This engagement has shown that there is a good understanding within the technology sector. However, whilst there can be action taken on transportation and buildings emissions, the emissions and wider environmental impacts related to the extraction of resources in the manufacture of these products is harder to quantify and understand. This means that more accurate data on the emissions of this spend will be hard to acquire. Nevertheless, ongoing engagement with these suppliers as they work to understand their emissions will enable the authority to benefit from their learnings to inform our own decision making and emission reporting.

Caerphilly Leisure and Wellbeing Hub

Engagement with the designers of this project discussed in the Reduce section was facilitated by the Buy Working Group as part of the work focused on how we engage with suppliers through the procurement process. As discussed, this early engagement will support the work being completed in improving the accuracy of reporting the organisation's supply chain emissions.

Robert Price

As a key supplier for the council's housing teams, Robert Price have been engaged to understand the emissions related to the products supplied to the council. Robert Price have a dedicated resource looking at sustainability and for certain products are able to provide more accurate data reflective of the embedded emissions.

Conversations with Robert Price will continue on how we can collaborate to reduce emissions and better understand the emissions related to the council's spend with them.

Robert Price were also engaged to be part of the focus group developing the 2050 Decarbonisation Strategy.

Buy Case Study – Robert Price

Robert Price, with Caerphilly County Borough Council, have been working together to create positive social, economic and environmental outcomes through partnership activities.

Skills Training and Community Workshops / Awareness and Education on Sustainable Building Practices

Throughout 2024, the Caerphilly team attended the following training with Robert Price totalling 171 training hours:

- Net Zero Innovation Morning
- Heat Pump Initiative launch
- Marley battery & inverter product launch
- Social Housing Flooring Showcase

- Wetherby Training

Robert Price have worked in partnership with Joyner Group, Ice Solar, and Liv Green to supply net zero solutions to support CCBC sustainability goals across multiple schemes. Wetherby External Wall Insulation and Marley Integrated Solar Panels have been installed at both Bryn Carno and Maesteg.

Robert Price will also be working with Wilmott Dixon and HighAdmit at the Former Oakdale Comprehensive School and Ty Darran Residential Home projects to supply Mixergy Smart Water Cylinders. These result in 21% savings on mains gas for residents, reducing emissions.

Supporting Local Employment Initiatives

Robert Price have strived to add social value by improving employability and offering support including:

- 2024 Apprentice New Starter Toolkits for Carpenters and Plumbers
- Caerphilly Contract Holder Flooring Event

Community Garden or Green Space Development

Robert Price has contributed materials, staff time and funds to enhance tenants' well-being, biodiversity, and aims to strengthen the social fabric by providing residents with a shared, sustainable outdoor space.

- Tree Planting Wyllie Tip
- Sponsorship of The Robert Price Bandstand for Schools, Colleges and the Youth Service Planters for Ukranian families
- Community Garden at Tir-Phil Community Centre
- Sheltered Housing Scheme - Ynyswen & Prospect Place House creating games room with donation of resident Welcome Packs

Community Donations

A total of £12,315 has been donated for:

- Hendre Infant School - reusable water bottles
- Sponsorship - Pride Caerphilly
- Caerphilly CBC Operation Santa and Foodbank Appeals
- Rhymney Valley Junior Rugby Team
- Pledge to Harvest food drive

Regional Approach

Led by the Caerphilly Procurement team, decarbonisation has been a major focus of the work of the South East Wales Delivery Group for Procurement over 2024. The Decarbonisation team have been worked with the SEW DG to refine guidance for the

implementation of Welsh Procurement Policy Note 06/21 which stipulates the requirement for supplier Carbon Reduction Plans for contracts over £5 million total value.

In implementing WPPN 06/21 it was agreed regionally that we would apply tiers of questions relating to CRPs depending on contract value with a strong recommendation to apply requirements for CRPs within certain carbon literate sectors such as construction, aligned to WRAP studies completed on the carbon literacy of public sector supply chains. It has been agreed that this guidance will be reviewed annually in January.

There has been regional work on the development of various tools to assist suppliers with calculating their own emissions. Rhondda Cynon Taf County Borough Council and Newport City Council have each developed tools which were reviewed regionally and internally through the Buy Working Group. The Decarbonisation Team fed back comments to the respective teams from RCTCBC and NCC, hopefully leading to the improvement of these tools. Through this work, we have also engaged with Business Wales who are in the process of developing a tool specifically for SMEs. There is a concern that there are already many tools for suppliers to use to calculate emissions and there is a need for a unified decision recommending a tool that will be Greenhouse Gas Protocol compliant as is required for the calculation of baselines in the development of a Carbon Reduction Plan. The GHG Protocol is a framework for emissions reporting that is used internationally and forms the basis for the WG Net Zero Carbon Reporting that the council reports through annually. To ensure reliable data it is important that the tools used by suppliers utilise correct methodology and produce data on the emissions categories required for a compliant CRP. Subject to improvements to the RCT tool, it has been suggested that, regionally, we direct suppliers to this tool in the first instance. The tool is hosted online and automatically produces a report which is sent to the supplier on the completion of the tool.

Through the SEW DG, it was raised that there is a gap in knowledge within procurement teams over how to assess and validate CRPs once received from suppliers. The Decarbonisation Team organised CRP validation training for procurement colleagues around the region, which was attended by representatives from all 10 authorities within the CCR. The training was delivered by the sustainability team from the Crown Commercial Service and was a comprehensive overview of the required components of a CRP for it to be compliant under WPPN 06/21. Building skills and knowledge within all teams to understand how they can embed decarbonisation into their roles is integral to working towards Net Zero. The training was recorded and shared externally with all teams across South East Wales so that all colleagues can benefit from it.

Key Priorities & Next Steps for 2025

Working Group Structure

Initially, working groups were created to each focus on a different pillar of the Decarbonisation Strategy and Action Plan. As work has progressed, the interconnectivity of the various aspects of these workstreams has become apparent – particularly between Reduce and Produce. It is integral to the success of the delivery of these pillars that the cross-cutting issues are identified and utilised to inform the work of the other. For example, in decarbonising buildings an aim is to reduce the energy demand, however, the type of energy used may move from gas to electricity. This will affect the quantity of electricity generation required in a local area. The transition to electric vehicles will further add to this demand. And so in considering the installation of PVs or the construction of larger renewable energy projects, the increased demand needs to be considered.

Additionally, the development of the 2050 Decarbonisation Strategy focused on territorial emissions, there will be further overlap with the existing Buy working group.

Within carbon reporting, there is a distinction between operational and supply chain emissions. The Decarbonisation Team therefore recommend that the working group structure be updated to reflect this distinction, combining the Reduce and Produce groups into one Operational Emissions Working Group to streamline the respective workstreams and ensure a holistic, single view of operational decarbonisation.

Building Decarbonisation Programme

A priority action for the next year is to develop a fully costed plan for decarbonising the estate considering capital and revenue requirements to achieve net zero. Whilst some good preparatory work has been completed in assessing current building upgrade requirements, more needs to be done to bring together the various aspects of the Asset Management Strategy into a single view of change. This will be complimented by the merging of the Reduce and Produce groups so that each asset is assessed holistically.

Metrics

Further metrics will be developed through the Vehicle Replacement Strategy and the Fleet business plan.

With the shift towards corporate responsibility for assets, a priority for the next year will be to develop carbon budgets and targets for emissions reductions through the respective corporate management strategies. The collation of metrics for corporate carbon budgets will facilitate the creation of route maps to zero for the various components of our operational emissions. Further, this enables consistent progress reporting and responsibility for emissions reductions aligned to our net zero goals.

Currently, organisational operational emissions are not realising the impact of action taken to reduce emissions – this is in part due to improved data collection and accuracy as outlined above. Clear trajectories of emissions reductions for each emissions sector will help to focus action and improve understanding of resource implications and needs for the deliver of the Decarbonisation Strategy & Action Plan.

Carbon Literacy

The initial rollout of Carbon Literacy training has had an overwhelmingly positive response. Further engagement through MTC has prompted further interest across the authority. Over 2025, the wider rollout of Carbon Literacy training for member, senior leaders, officers and residents is a priority for the team. This will support the delivery of the action plan by building skills and understanding throughout the organisation.

Decision Making

A key priority for the next year is the further integration of decarbonisation within internal decision making processes. Whilst the inclusion of decarbonisation into the MTC business case documents is a positive first step, the Decarbonisation Team will prioritise working with Policy colleagues in reviewing the Integrated Impact Assessment to embed decarbonisation into this process.

Grey Fleet

Since 2021/22 grey fleet emissions have consistently risen as the workforce return to quasi-pre-covid ways of working. The council operates salary sacrifice schemes to support employees in reducing emissions in their travel for work. However, the positive impacts of these schemes are not reflected in the data. Work is required to understand the travel needs of services and how emissions from this travel can be reduced. The WLGA have released a toolkit for reducing grey fleet emissions which can compliment studies completed by Cardiff University Data Science Academy students through the CCR Challenge Fund project to inform a route to reducing grey fleet emissions within the council. Working to reduce these emissions could also have a financial saving for the authority.

2. Territorial 2050 Net Zero Target

In 2021 WG set out to make it's *"long-held ambition of a Net Zero Wales, a reality. While we have set our intention to achieve this by 2050 in law [...] we will not shy away from stopping harmful emissions being pumped into our atmosphere and heating our planet. Business as usual is not an option."*

Since the declaration of a Climate Emergency in 2019, the Council have been focused on its 2030 organisational emissions reductions. Whilst there has been some crossover between what are emissions of the organisation and what are of the wider county borough, there has not been a focus on the All Wales 2050 Net Zero Target set by Welsh Government. Given the scope of this target, working to understand and act on reducing the territorial emissions of the borough is not solely the responsibility of the local authority. The Caerphilly Local Delivery Group (LDG) of the Gwent Public Services Board (PSB) agreed an action to author a partnership Strategy document to achieve this ambitious goal.

In April 2024, two officers funded through the UK Shared Prosperity Fund were put in place to lead on the development of a 2050 Net Zero Carbon Strategy alongside delivering meaningful interventions to both residents and businesses within the borough to support them in reducing emissions. Due to the short-term funding availability, the strategy will need to be completed by March 2025. The LDG agreed that the Strategy would form the basis for a corresponding Action Plan. Resourcing for the development of this plan is subject to further funding availability.

Development of Caerphilly Net Zero Carbon 2050 Strategy

In order to develop a robust and inclusive 2050 Decarbonisation strategy, officers conducted an initial piece of qualitative research which aimed to identify the barriers and enablers for individuals and businesses in achieving net-zero carbon by 2050. Officers conducted semi-structured interviews with local businesses and residents. These interviews provided in-depth insights into the challenges and opportunities faced by communities in the journey towards Net Zero.

Identified barriers to Achieving Net Zero:

1. Low Self-Efficacy: Many participants felt they lacked the confidence or ability to make significant changes towards reducing their carbon footprint.
2. Misinformation: There was a prevalent issue of misinformation or lack of accurate information regarding decarbonisation.
3. Low Social Support: Participants often felt isolated in their efforts, lacking the necessary social support to pursue sustainable practices.

These findings reinforce the foundations of the Innovate UK funded project which is focused on resident engagement with Net Zero and decarbonisation.

Based on these findings, guiding cross-cutting principles were developed to illustrate how residents and businesses in the borough need to function for a successful strategy. These principles were taken to a Task and Finish group, enabling the chapter authors to weave these themes across the strategy. Additionally, these principles helped develop the content of the Focus Group material, ensuring that discussions were aligned with the identified needs and priorities of our community. This research incorporated previous qualitative research and thematic analyses conducted by the CCBC Engagement team and former consultations over the past four years. Understanding the specific barriers and enablers identified by Caerphilly County Borough communities, and transforming these into guiding principles, enables the development of targeted strategic objectives and actions that address these challenges and create opportunities. This research underscores the importance of continued engagement with our residents and businesses to ensure that the strategy is both effective and inclusive.

Task and Finish Group

A milestone to highlight is the successful establishment and operation of the Task and Finish Group, a dedicated subgroup of the Gwent Public Services Board Caerphilly Local Delivery Group (PSB LDG).

The group has maintained a consistent meeting schedule, convening monthly to ensure continuous progress and timely decision-making. Attendance and contribution from across the partnership has been high, with members evidencing willingness to shape the work. The group hold a diverse range of skillsets from various sectors, bringing together perspectives and expertise to inform the strategy. Members of the partnership are actively involved in writing the strategy, ensuring buy-in and true collaboration. This inclusive approach has been crucial in aligning our efforts and achieving our shared objectives. The group has established governance procedures to guide its operations and decision-making processes. Timelines for the project have been set, ensuring that all activities are completed in a timely and efficient manner. The group has considered qualitative data and public engagement feedback to inform its strategies and actions. A comprehensive structure for the final strategy document has been created, providing a clear framework for its development. A systematic process for authoring the end strategy has been established, ensuring that all contributions are integrated seamlessly.

The Task and Finish Group includes representatives from the following CCBC departments and external partners:

CCBC Departments: Business Enterprise Renewal, Engagement, Planning, Policy, Housing, Decarbonisation, Healthy Schools, Employability, Waste

External Partners: Gwent Police, South Wales Fire and Rescue Service, Aneurin Bevan University Health Board (ABUHB), Groundwork Trust, Gwent Association of Voluntary Organisations (GAVO), Cardiff Capital Region (CCR) and Transport for Wales

The Task and Finish Group has significantly contributed to the developing decarbonisation strategy by establishing it as a partnership document. This approach has helped the team avoid viewing the work as solely embedded within and as the responsibility of the Local Authority. Instead, it has fostered a sense of shared ownership and collective responsibility. Additionally, having sector experts involved ensures that the strategy will be comprehensive and will not miss any statutory guidance or previous work undertaken, further strengthening its robustness and applicability.

Focus Group Event

On 19th September 2024, the team hosted a significant focus group event aimed at consulting on the 2050 Decarbonisation strategy. The event featured a keynote address by Cllr James Pritchard and saw robust participation from community and business representatives, as well as elected members.

65 individuals signed up to the event. Attendees engaged in in-depth discussions on the chapters of the strategy:

- Energy
- Travel
- Land Use and Agriculture
- Waste
- Business
- Buildings

The event was marked by the attendees' extensive knowledge, passion, and commitment to developing the strategy. Contributions were of a high standard, showing engagement with the material presented, and their enthusiasm to remain involved in the ongoing efforts towards compiling an effective Strategy was appreciated.

The team will continue to liaise with the focus group cohort to ensure ongoing involvement and input. Regular updates on the progress of the strategy and the impact of the contributions made by the participants will be fed back. Currently the team intends to consult on the draft 2050 Net Zero Decarbonisation Strategy in January 2025. Following the development of the strategy, it is anticipated that there will be further focus group events and engagement exercises to maintain momentum and foster ongoing collaboration.

SPF Funded Interventions – Businesses and Residents

Since establishing the project in April 2024, the Decarbonisation Team has made significant strides towards fulfilling the UK Shared Prosperity Fund targets for both businesses and residents in Caerphilly County Borough.

For Businesses:

- Conducted in-person carbon reduction workshops, engaging local businesses in practical strategies to lower their carbon footprints.
- Piloted a social care carbon calculator with providers, helping them measure and manage their carbon emissions.
- Organised networking events and consultations on the 2050 strategy, fostering collaboration and long-term planning.
- Provided advice on funding options for electric vehicle chargepoints and solar energy, facilitating the transition to renewable energy sources.
- Signposted businesses to carbon footprint assessment consultancy, enabling them to track and reduce their emissions.
- Hosted workshops on how the green agenda can positively impact financial performance, highlighting the economic benefits of sustainability.

For Residents:

- Participated in public events during Green Libraries Week, offering in-person guidance on home energy use.
- Engaged with the community at Halloween events, providing practical advice on reducing energy consumption.
- Conducted follow-ups from carbon literacy training, reinforcing the importance of sustainable practices at home and ensuring residents have made pledges to motivate their transition to low-carbon living.

Outcomes and Outputs:

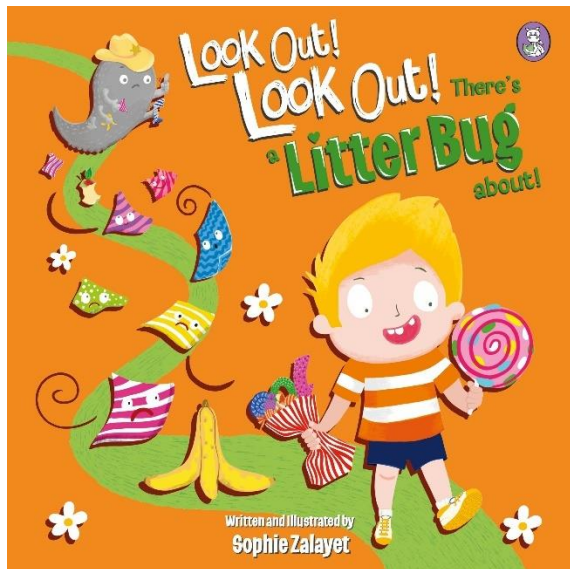
- For businesses, we have achieved 135 of the targeted 200 outputs, demonstrating substantial progress in our initiatives.
- For residents, we have completed 82 of the targeted 600 outputs and 40 out of the targeted 50 outcomes, reflecting our ongoing efforts to engage and educate the community.

Resident Intervention Case Study – Green Libraries Week

Green Libraries week ran between the 7th and 13th of October 2024. During this week, Libraries run events and share information on the various projects and positive impacts that libraries have to improve their sustainability and contribute to emissions reductions and the circular economy.

The Decarbonisation Team were approached by the Library team working on this week to support them in providing information for residents and running events. This represented a cross-cutting opportunity to talk to residents all around the borough about energy efficiency alongside wider decarbonisation issues.

The Decarbonisation Team contacted partners from Keep Wales Tidy and ABUHB, to organise litter picking and social strolling activities that started from libraries across the borough.



Utilising SPF funding, the team organised and funded author talks at Risca and Caerphilly for local school groups by author Sophie Zalayet, writer of *'Look Out! Look Out!! There is a Litter Bug about!'*

This provided an opportunity to engage with school children, teachers and parents on the importance of protecting our environment. Both events were well attended and enjoyed by those in attendance.

Alongside this, the team reached out to Tom Bullough, winner of Welsh Book of the Year for his non-fiction book *Sarn Helen*. *Sarn Helen* charts Tom's journey down Sarn Helen, which is the Roman road which runs the length of Wales. It chronicles his experience of the Welsh countryside and the impact that humans have had on it over time. Tom agreed to deliver two talks on the 19th October at Bargoed and Caerphilly libraries. The talks spoke about his experience in writing the book and explored wider decarbonisation and climate change issues.



Both events were well attended and led to engaging and thoughtful discussions during Q&A

The Decarbonisation Team visited Risca, Abertridwr, Caerphilly, Ystrad Mynach and Blackwood libraries over the week for drop-in sessions coinciding with organised litter picks to talk to residents about energy efficiency and decarbonisation. The Team also attended the Rhymney library Eco-Event.

Over the week and in related library events, the team had engaging discussions with residents across the borough. To support residents in making small changes to reduce their energy emissions, the team provided residents with radiator keys and thermometer cards. Infographics were produced bilingually to provide residents with advice on free, cheap and larger changes that they can make alongside highlighting the various funding and grant help that is available.

The team initially were resistant to printing information for residents, preferring to use display boards, QR codes and conversation. However, over the week, it became clear that to have wider impact, leaflets detailing the key points would be beneficial and this is a lesson learnt to be taken forward to future engagement events.

Academy Placements

To address an emerging resource issue and to collaborate with the Employability team with whom we work on the LDG Action Plan, we took on 3 Academy Admin placement candidates. We have been fortunate to gain 3 candidates each with a background which complements a chapter of our strategy. This collaboration is pivotal in testing the SPF funded positions and the ability to create a placement which enhances green skills trained individuals to strengthen the workplaces across the borough.

Local Area Energy Planning (LAEP)

Beginning in 2023, Welsh Government commissioned the development of Local Area Energy Plans for all local authorities in Wales (except for Pembrokeshire, Conwy, Bridgend and Newport who had already piloted the LAEP process). The consultants commissioned to develop the LAEP for Caerphilly County Borough (and the other local authorities within the Cardiff Capital Region) were ARUP, Carbon Trust and Afallen. The LAEP is a partnership document which sets out the needs for the entire borough and its delivery is not solely the responsibility of the council, but of all partners within the county borough.

The guidance on developing a LAEP using the Energy Systems Catapult methodology sets out a LAEP as:

- Setting out the change required to transition an area's energy system to net zero in a given timeframe.
- Data driven and whole energy system, evidence-based approach that is led by local government developed collaboratively with defined stakeholders.
- Resulting in a fully costed and spatial plan that identifies the change needed to the local energy system and built environment, detailing 'what, where and when and by whom'.
- Identifying near-term actions and projects, providing stakeholders with a basis for taking forward activity and prioritising investments and action.

The process of LAEP development is in 7 stages:

Stage 1: Project Inception & boundaries; Relevant data sources identified;

Stage 2: Stakeholder engagement (runs throughout the LAEP);

Stage 3: Representing the local area and its energy system;

Stage 4: Modelling future options;

Stage 5: Refining scenarios and selecting pathways;

Stage 6: Developing actions, priorities and priority projects;

Stage 7: Creation of the Plan

At the end of the process, three complimentary documents will have been created:

- (i) Main LAEP report – the overarching plan focusing on the borough's area-wide local energy plan and actions
- (ii) Technical Report – contains the data, graphs, maps and charts which support what is contained within the main report. It also provides more detail on the methodology.
- (iii) Renewable Investment Prospectus – this is a regional document collating short term regional and local renewable energy opportunities within the Cardiff Capital Region.

Throughout the development of the LAEP, there is a focus on stakeholder engagement to contribute to the process. The Decarbonisation team assisted the commissioned consultants, ARUP, Carbon Trust and Afallen, with co-ordinating and hosting a total of 7 workshops over the creation of the plan. Stakeholders were engaged from across the Council, PSB partners including ABUHB, NRW and GAVO, educational institutions, private sector energy stakeholders, local businesses, the Coal Authority, National Grid Energy Distribution and Wales and West Utilities. Through this engagement, the Decarbonisation team have built and further strengthened relationships with key stakeholders within the energy sector, particularly from NGED, WWU and the Coal Authority.

The LAEP went through multiple drafts and consultation stages to ensure that all feedback could be considered and incorporated where appropriate.

Within the main LAEP and technical reports, there is extensive analysis of the current energy system and its components including energy generation, domestic & non-domestic building fabric and transport requirements. These elements of the reports are a useful foundational basis for further work for the Decarbonisation Team – both internally considering council owned buildings and land holdings and externally in working with partners in the public and private sectors in identifying opportunities for decarbonisation in support of the 2050 net zero target.

The purpose of the LAEP is to provide short-term low regrets actions and interventions for the decarbonisation of the local energy system. Within the Caerphilly LAEP, the council and other stakeholders have reaffirmed commitment to existing actions that are focused on these short-term priorities. However, further work is needed to fully comprehend the wide-ranging complexities of the medium and long-term collaborative actions required to achieve a net zero energy system by 2050.

The Decarbonisation Team received the final draft of the main LAEP report at the end of October 2024. The team are waiting for the remaining documents (Technical Report & Renewable Energy Prospectus) to be finalised and for the suite of documents to be translated so that they can be brought through internal governance processes for endorsement.

Work has begun to collate the identified local priority intervention areas in each local area into regional and national energy plans. The Decarbonisation team continue to be involved in regional and national LAEP forums to contribute to the shaping of the delivery of these plans. How the delivery of the LAEPs will be resourced and co-ordinated moving forward is yet to be established by Welsh Government.

Key Priorities & Next Steps for 2025

Completion of the CBC 2050 Decarbonisation Strategy

- Over the past year, we have successfully completed the initial phase of the CBC 2050 Decarbonisation strategy. During November and December, we will focus on authoring, editing, and translating the strategy to ensure it is comprehensive and accessible.

Consultation in January 2025

- In January 2025, we will engage in a comprehensive consultation process on the draft version of the CBC 2050 Decarbonisation strategy. This will involve gathering feedback from key stakeholders, including elected members, residents, and businesses. The consultation will ensure that the strategy has heard the voice of the whole community and that it is ambitious enough to meet our net zero 2050 objective. This collaborative approach will help us refine the strategy and address any challenges effectively.

Seek Funding and Resources to Develop Action Plan and Begin Delivery

- Following the consultation, our focus will shift to securing the necessary funding and resources to develop and implement our action plan. We will explore various funding avenues, including UKSPF transitional funding, to support this work. Once the resources are in place, we will begin to deliver the Action Plan, taking forward the collaboration with those individuals who have helped us so far. We will be able to prioritise workstreams according to their strategic priorities.
- By following these steps, we are confident in our ability to achieve our strategic goals as part of the wider LDG partnership and continue hearing from our stakeholders.

3. Climate Adaptation

What is Adaptation?

Climate adaptation is about making changes to live with the effects of climate change. For example, building improved flood defences to protect against increased rain fall or planting drought-resistant crops in areas that are getting drier. This is distinct from climate mitigation which is about reducing or preventing the causes of climate change. For example, reducing emissions by using renewable energy or transitioning to an electric vehicle.

In short, mitigation is trying to slow down climate change and adaptation is preparing for the effects that we are already experiencing and know we will experience in future.

The current work of the Decarbonisation Team has been focused primarily on mitigation measures. However, the twin challenges of achieving net zero and adapting to climate change are equally important and urgent. The United Nations (UN) have recently reported that current policy ambition will not limit warming to 1.5 degrees of warming as intended by the Paris Agreements in 2015. Instead, the world is on course for a temperature rise of 2.6 – 3.1 degrees over the course of this century. Even at the current rate of 1.3 degrees of warming, the impacts on the borough and across the world are intensifying. There are impacts that are already 'locked-in' and it is imperative that further work is completed to understand the Caerphilly specific impacts of the updated projections so that measures to adapt can be taken in plenty of time.

Where do we stand?

Between 2013 and 2015, officers completed an extensive exercise to understand the current and future impacts of climate change on the borough and the delivery of services. Following Welsh Government guidance under the Climate change Act 2008, a Local Climate Impacts Profile (LCLIP) was produced which used climate projections to identify Caerphilly specific impacts and understand what measures were already in place to adapt to these.

The LCLIP identified 128 total impacts with 32 rated as high priority. The study also identified that systems are in place including Business Continuity, Emergency Planning, Major Incident Plan, Corporate Risk Assessment as well as individual Service Plans.

Welsh Government Guidance

Welsh Government published its second national climate adaptation plan in 2019 which is a five-year plan setting out actions being taken by WG to prepare for and

adapt to the risks and impacts of climate change. However, the Climate Change Commission's 2023 progress report on adaptation in Wales found that there was insufficient progress in the delivery and implementation of adaptation.

Following this, in October 2024, Welsh Government have published an updated Climate Adaptation Strategy which outlines the interrelated risks and approaches within Wales and identifies a way forward through an updated action plan for Welsh Government in taking further action on adaptation. The strategy also speaks to the importance of collaboration on adaptation planning and the roles of local authorities and PSBs in delivering action. It makes an ask of the public sector to take steps to meet the objectives in achieving the goal of a Resilient Wales under the Well-being of Future Generations Act.

MET Office Training & Regional Approach

The Gwent Wellbeing plan is committed to supporting communities to adapt to the impacts of climate change, recognising that some communities are more exposed to floods, heatwaves, air pollution and other climate risks to health. The first step in setting out an Adaptation Strategy for Gwent is to undertake a Climate Risk Assessment in line with national guidance. Through the Gwent PSB Regional Support Funding, two decarbonisation officers attended MET Office training on assessing climate risk that was co-ordinated by NRW colleagues.

Colleagues from across the PSB including NRW, ABUHB and other local authorities attending the training to build skills and understanding within the region with a view to collaborating on a regional approach to adaptation.

Led by NRW and Newport City Council, officers have been involved in a Task & Finish group which is writing a bid for funding from the Heritage Lottery Fund. The proposed project is focused on building knowledge in communities and driving community engagement and action on adaptation. The bid is due to be submitted at the end of November. This project is focused on a regional approach to adaptation and the development of a Gwent adaptation plan.

Resourcing Future Work

With the publication of the WG strategy for adaptation, it is anticipated that there will be a renewed focus on this climate change challenge. The WLGA Climate Strategy Panel have started a new Adaptation task and finish which will be developing a programme to support councils with adaptation planning and service resilience.

Within the strategy it says,

“Following publication of this strategy and the associated monitoring framework, it is the Welsh Government's intention to consider the potential role of public sector reporting as part of our wider climate adaptation monitoring and evaluation programme in Wales.”

It is possible that through this strategy there will be a new reporting framework to enable monitoring and evaluation of adaptation through the public sector.

Utilising updated NRW guidance and climate projections to update and build on the work completed a decade ago is an imminently important project for the council in its response to climate change.

Whilst this work does not necessarily sit within the current remit of the Decarbonisation Team, the team is most likely best placed within the organisation to complete this work. However, this will not be possible with current resource capacity.