

Blaenau Gwent County Borough Council

Net Zero Report 22/23



Decarbonisation Plan 2020 to 2030



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Blaenau Gwent County Borough Council Net Zero Report 2022/23

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Mae'r ddogfen hon ar goel yn Gymraeg

This document is available in Welsh.



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1. Our Approach

Our approach is based on Welsh Government's two Net Zero targets: Net Zero 2030 for the Welsh Public Sector (organisational emissions) and Net Zero 2050 for all of Wales (territorial emissions). Our organisational emissions are the carbon emissions produced by delivering our services, while Blaenau Gwent's territorial emissions include all the carbon emissions released within the borough, from homes, transport, businesses etc. We have made a clear separation between these two Net Zero goals because the two types of emissions often require quite different types of action, and we have greater direct control over our organisational emissions. This report provides an overview of our organisational carbon footprint for 2022/23 and a summary of the actions we are taking towards our Net Zero 2030 and Net Zero 2050 ambitions.

2. Summary of Activity

At the corporate level 'Respond to the nature and climate crisis and enable connected communities' was adopted as one of the four key priorities in our new Corporate Plan 2022-27. This year saw a refresh of our Climate Group, which is now chaired by our Interim Chief Executive, its core membership also includes our first elected Climate Champion, three members of our senior leadership team and a trade union representative. The group meets every six weeks with an alternating focus on Net Zero 2030 at one meeting and Net Zero 2050 at the next.

Having identified all our Net Zero 2030 Actions across our transitions during 2021-22, to focus on the Climate Group is on delivery of these actions. The group has selected five of these as **key Net Zero 2030 actions** (see page 10) due to their significant carbon and resource impacts. While these actions will be the group's priority, over the course of a year the group will hear from lead officers about all our Net Zero 2030 actions through 'Transition Focuses' on all eight transitions. These Transition Focuses will take a forward look at the challenges and opportunities ahead, as well as monitoring progress. This report includes the first two completed **Transition Focuses** (see page 11) plus shorter versions of the others, and in future years will include full versions of all eight.

We have also taken significant steps in developing our approach to Net Zero 2050. The four themes that emerged from the Blaenau Gwent Climate Assembly (Energy, Housing, Nature and Transport) will form the basis for our Net Zero 2050 Framework document that is currently being developed. Leads for each of these themes have been identified to take forward the Climate Assembly recommendations. Net Zero 2050 is not something that we can deliver alone and will require partnership working. Our work with Blaenau Gwent Well-being Partnership is currently focused on the ongoing workshops to develop our Local Area Energy Plan which will address how we reach a Zero Carbon energy system in Blaenau Gwent and will cover the majority of our territorial emissions. One of the two objectives of the new Gwent Well-being Plan is 'we want a climate-ready Gwent, where our environment is valued and protected, benefitting our well-being now and for future generations.'

Of course, achieving Net Zero is ultimately about delivery, and the detail our progress over the last year, can be found in our carbon footprint and the transition focuses.

3. Organisational Net Zero 2030

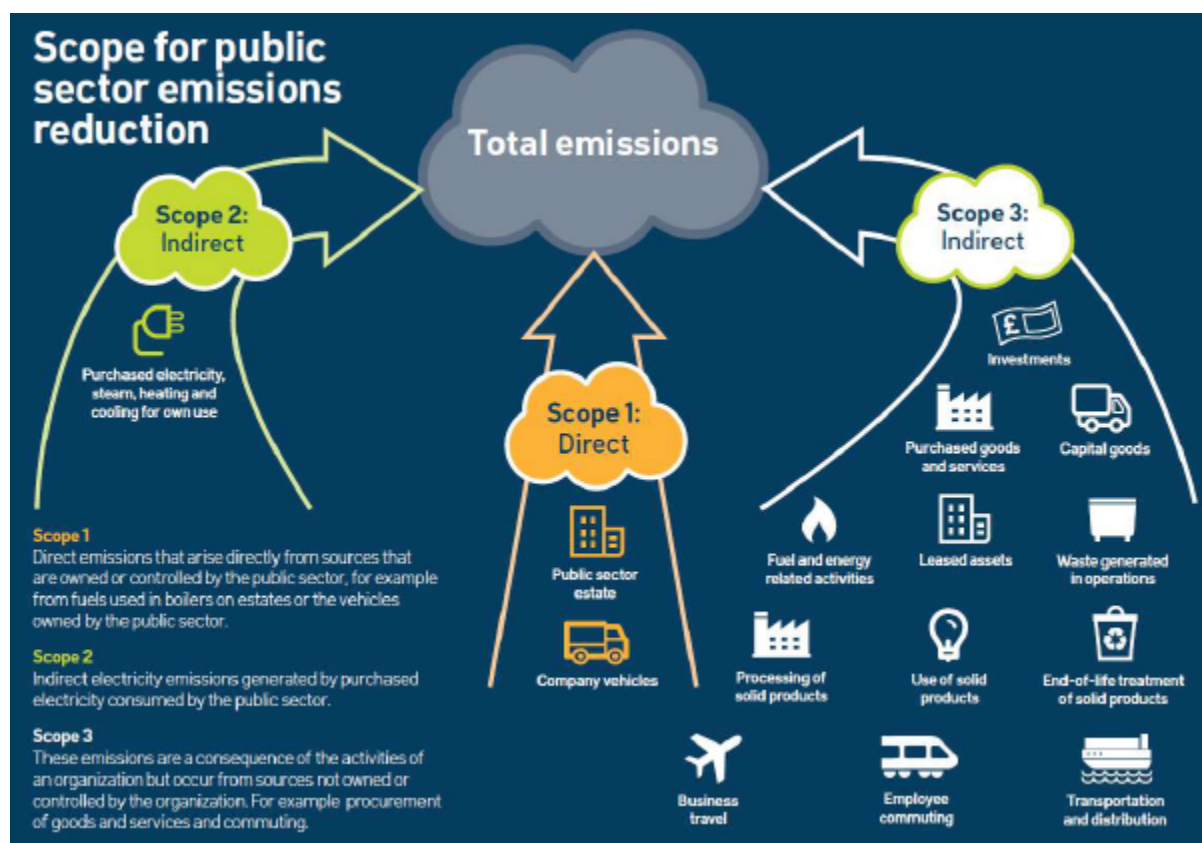
Our Decarbonisation Plan was adopted in September 2020 at the same time we declared a Climate Emergency. The plan addresses our organisational emissions with the aim of making our full contribution to the ambition of a Net Zero Public Sector in Wales by 2030.

We have adopted a data driven approach, based on identifying from our carbon footprint, eight transitions we have to undertake to reach Net Zero. Each of these transitions represents a coherent area of action with its own distinct low carbon technologies, business models and infrastructure. Each of these transitions has its own detailed actions to deliver it. Our approach is based on mainstreaming decarbonisation into our operations, rather than establishing separate decarbonisation projects and budgets. With a cross-organisation climate group providing corporate overview. Overview of our Transitions:

1. **Transport.** Travel by our staff in corporate or their own vehicles, includes fleet, commuting and staff travel within work.
2. **Nature Based Solutions.** Absorption of carbon on land we own and manage, largely associated with woodland, urban trees and peatland.
3. **Procurement: Goods.** Which covers what we purchase as an organisation and includes key items such as clothing, food, IT, machinery, equipment and furniture.
4. **Procurement: Services.** Which covers the services we procure to deliver our functions such as schools and social services. This also includes investments such as pension schemes.
5. **Procurement: Works.** Which includes all construction and maintenance of our buildings and infrastructure.
6. **Electricity.** Covers the electricity we purchase to run all our services. It includes key things such as street lighting, running our corporate buildings and schools. It also includes our use of renewable technologies.
7. **Heat.** Includes our heating (and cooling) of our buildings.
8. **Waste.** Covers the carbon impacts of our treatment of municipal waste, whether recycling, landfill or waste to power.

4. Our Carbon Footprint

Our carbon footprint is divided into three scopes (see diagram below). Our footprint includes all emissions from assets, such as buildings and vehicles, that we have day-to-day operational control of, whether we own or lease them (Scope 1 and 2 emissions) and emissions which are the result of our procurement and other organisations delivering services on our behalf (Scope 3 emissions). We calculated our baseline carbon footprint for 2019/20.



The underlying method for calculating our carbon emissions is quite simple. Carbon emissions are the amount of an activity that we carry out (e.g. litres of diesel used by our fleet or the amount spent on construction projects) multiplied by the nationally calculated average carbon intensity of a unit of that activity (e.g. the carbon emissions from a litre of diesel or pound of spend on construction projects):

$$\text{carbon intensity of activity} \times \text{amount of activity} = \text{total emissions}$$

(e.g. CO₂ per litre x litres of fuel used = emissions)

Our carbon footprint emissions can be divided into two types, which differ significantly both in the level of control we have on achieving carbon reductions and also how they can be monitored. The first type, **direct emissions** are either directly released through our operations (e.g. fuel burnt in our fleet) or through our consumption of electricity (e.g. street lighting), these emissions largely correspond to scopes 1 & 2. Due to the direct relationship between our activities and carbon being released, we have relatively high levels of control

on reaching Net Zero for these emissions and therefore we can directly measure our progress in terms of carbon emissions.

The second type, **spend based emissions** are related to our procurement of products and services, these include most scope 3 emissions, we have less direct control over these emissions. Spend based emissions calculations can give a reasonable estimate of the size of these activities' contribution to our overall carbon footprint. However, because they are calculated based on our financial spend and national average carbon intensity factors, they cannot accurately detect changes in our performance from year to year, so they are not suitable for monitoring our performance over time. As a result, we will not update our spend-based emissions figures on an annual basis.

Two of our transitions have negative carbon emissions figures. The nature based solutions transition is about the carbon impact of the land we own. This figure is based on the net annual change in the carbon stored and released from the land we own and/or manage. These land-based figures are true **negative net emissions** that represent removal of carbon from the atmosphere.

The negative figure for the waste transition represents **avoided emissions**, the amount of carbon emissions that are avoided by others producing products using recycled waste rather than new materials. However, our footprint only includes the emissions from the recycling process. For this reason, the avoided emissions from municipal waste are not part of our carbon footprint.

We have also reported the amount of renewable electricity we have generated; these figures are not directly part of our carbon footprint. As the carbon savings from the electricity we use ourselves is already captured in our footprint through the reduced amount of grid electricity we need to use, while the electricity we export to the grid contributes to the lowering of the carbon intensity of the national grid as a whole.

2022/23 Carbon Footprint (tonnes CO²e)

Scope 1 - Direct Emissions	19/20	20/21	21/22	22/23
Natural Gas Heating	3,942	3,725	3,483	3,512
<i>Natural Gas Heating Aneurin Leisure</i>	1,152	798	1,076	967
Biomass Heating	60	67	75	46
Diesel Fleet	911	905	933	782
Petrol Fleet	18	9	10	10
Liquid Natural Gas Fleet	35	31	32	28
Scope 1 Total	6,118	5,535	5,609	5,345
Scope 2 - Electricity Indirect Emissions				
Metered - Buildings	1,792	1,272	1,265	1,171
<i>Metered - Buildings Aneurin Leisure</i>	572	279	374	343
Unmetered - Street Lighting	968	870	700	642
Scope 2 Total	3,332	2,421	2,339	2,156
Scope 3 - Other Indirect Emissions				
Purchased Goods and Services	23,069	22,723	21,753	33,548
Extraction, Production & Transportation of Fuel & Energy Used	2,104	1,727	1,548	1,620
<i>Extraction, Production & Transportation of Fuel & Energy Used Aneurin Leisure</i>	288	170	323	294
Water	46	42	22	23
<i>Water Aneurin Leisure</i>	22	12	6	8
Business Travel	278	118	198	281
<i>Business Travel Aneurin Leisure</i>	11	2	4	8
Staff Commute	2,335	1,557	2,074	2,067
Homeworking Energy Use			352	327
Organisational Waste and Downstream Transport	216	209	612	205
Scope 3 Total	28,369	26,560	26,892	38,383
Sequestration				
Forest land	-2,350	-2,350	-2,350	-2,350
Grass land	-55	-55	-55	-55
Settlements	919	919	919	919
Sequestration Total	-1,486	-1,486	-1,486	-1,486
Carbon Footprint Total	36,333	33,030	33,354	44,398

Indicates figures not suitable for monitoring annual progress

Indicates figures not directly comparable due to change in methodology

Indicates new data

Indicates previous years data revised due to significant changes in emission figures

Indicates figures less accurate as fleet vehicles not able to refuel at Depot for most of year

Carbon Footprint Trends

Firstly, some notes on revisions to our carbon footprint data from previous years. There is a major change to our carbon footprint this year due to the use of a new set of emissions factors by Welsh Government to calculate our spend based emissions for purchased goods and services. These factors are significantly lower than the set of factors which we have used every previous year. New spend based factors had not previously been available due to the complexity of calculating them. As a result, the previous factors did not reflect a decade's worth of substantial decarbonisation in the supply chain, particularly of the electricity grid, there was also likely a significant issue with the impact of 10 years inflation on emissions per pound spent. The recalculation of our previous three years footprint using these factors has reduced these emissions each year by 42%-44%. This also has a substantial impact on the relative sizes of our transitions which have also been recalculated. These lower figures are almost certainly more accurate, but it is important to remember that the same limitations of spend based figures still apply, these figures cannot reflect any year-to-year changes in our carbon performance as they are based on national averages.

However, the procurement emissions figure this year is far higher than these revised figures for the three previous years. This is largely due to spend on rail infrastructure improvements to the Ebbw Vale line. This is a major construction project and represents a significant proportion of our total spend and will of course have climate benefits for Blaenau Gwent in the long-term.

We have also revised our commute emissions from 19/20 and 20/21 to make them directly comparable with our post home and agile working model years. When looking at the reductions from commuting and the new figures for homeworking energy use it is important to remember that the homeworking emissions are largely not new emissions, but rather existing emissions that have been displaced from our office-based gas and electricity emissions. Therefore, it would not be accurate to see them as new emissions that cancel out the savings from reduced commuting.

Changes in our directly measured carbon emissions which do capture annual changes in performance (and do not include the rail works) are shown in the table below. Overall there has been a 6% fall in these emissions compared to last year and a cumulative 16% fall over the three years since our 2019/20 baseline. Following a rise in emissions last year post-COVID 19 an overall downward trend in emissions has resumed.

	tonnes CO ₂ e/year					
	2019/20	2020/21	2021/22	2022/23	Change from Base Year	Change from Last Year
Direct Carbon Emissions	14,750	11,793	13,087	12,336	-16%	-6%

This year for the first time we have included our footprint submission includes our total annual generation from Solar PV, which is 301,839 kwh. Which is equivalent to 3% of our total grid electricity consumption, or enough to power 108 average terraced homes for a year.

5. Position Summary

With the completion in 2022 of our Readiness Assessments, identifying 39 Net Zero 2030 actions across the eight transitions identified in our Decarbonisation Plan, we felt that we have a good understanding of where we are and what we need to do to reach Net Zero 2030. With this understanding in place, it was decided to refresh the structure of our renamed Climate Group, with a forward-looking focus on delivery for Net Zero 2030. The group identified five key Net Zero 2030 actions (see table below) from within the full list of 39, to be the focus of their work. These key actions are either **large impact/high ambition actions** that will have the greatest impact on our journey to Net Zero 2030 (and correspondingly also have the largest resource implications) and/or **low regrets actions** which offer significant scope to make progress in the short-term with proven decarbonisation solutions (which may offer financial as well as carbon returns). These key actions will provide the initial focus for group in identifying the additional resources needed between now and 2030, including any skills and capacity gaps as well as financial challenges in achieving Net Zero.

Net Zero 2030 Key Action	Description
Fleet Decarbonisation Plan (T2)	We know that reaching Net Zero will require our entire fleet to switch to ULEV vehicles and that this will require the physical and power capacity to accommodate these vehicles. The 2030 target means that many fleet vehicles would need to be replaced anyway within this timescale, regardless of decarbonisation. There are significant challenges around the availability of larger vehicles that make up the majority of our fleet mileage and emissions, and budget challenges around the shifting balance between increased purchase and decreased running costs of fleet vehicles.
Procurement Deep Dives (PG5)	Taking a systematic look at how we can tackle the different carbon hot spots in our procurement (e.g. I.T., food etc.) through deep dives to explore supply chains and develop specific actions/plans.
School Climate (PS3)	Schools are a large part of our footprint across most of our transitions. Different service areas currently separately engage schools about a number of different climate related topics (e.g. transport, energy, nature). A single corporate point of contact to create a clearer climate 'offer' to schools would help to encourage schools to commit to the actions and investment that are crucial to us achieving Net Zero.
Local Renewable Investment (E3 & PS4)	Potential for continued action in short-term, investment should be focused on local generation here in Blaenau Gwent. This action has two elements: generating electricity on our own estate (E3) and investing in renewable capacity in Blaenau Gwent as a whole (PS4). These are both elements of our wider Energy Prospectus and borough wide energy transition for Net Zero 2050.
Nature Based Solutions (N6)	Further enhance nature and carbon benefits of land holdings such as highway verges and school grounds that have already been improved and develop systematic approach to all our land holding types.

6. Transition Focuses

We will continue to monitor progress across all eight of our transitions, including through the Climate Group receiving a 'Transition Focus' on every transition over the course of a year. These focuses will provide a summary of progress on actions and the upcoming challenges and opportunities for that transition. This year's report includes the first two complete transition focuses (procurement goods and waste) received by the Climate Group, as well as partial versions for the other transitions. Next year's report should include full details for all transitions.

6.1 Transport *(Proportion of Footprint: 13%)*

Carbon Data

	tonnes CO ₂ e/year					
	19/20	20/21	21/22	22/23	Change From Base Year	Change From Last Year
Diesel Fleet	911	905	933	782	-14%	-16%
Petrol Fleet	18	9	10	10	-42%	5%
Liquid Natural Gas Fleet	35	31	32	28	-21%	-14%
Business Travel	278	118	198	281	1%	42%
<i>Business Travel Aneurin Leisure</i>	11	2	4	4	-64%	0%
Staff Commute	2,335	1,557	2,074	2,067	-11%	0%
Transport Total	3,588	2,622	3,251	3,172	-12%	-2%

Indicates previous years data revised due to significant changes in emission factors

Indicates figures less accurate as fleet vehicles not able to refuel at Depot for most of year

Transition emissions as a percentage of our 2019-20 Carbon Footprint Baseline

13 %

What does the transition include?

Transport includes all emissions associated with our fleet, and all energy use from other journeys undertaken by BGCBC staff as part of their job role or travelling to work. It does not include travel by other organisations delivering services on our behalf, travel associated with deliveries to or from us, or transport services we commission others to provide on our behalf, e.g. buses (which are all captured in procurement transitions).

Where do emissions come from in this Transition?

There are four main sources of emissions in this transition identified in the plan:

Transitions Breakdown				
	16-17	17-18	18-19	19-20
Transition 1 - Transport Direct				
1. Fuel Use by Fleet Vehicles	1,057	1,105	1,039	987
2. Fuel Use in Employee Commute			2,200	2,005
3. Fuel Use in Employee Business Travel			294	279
4. Emissions from Manufacture and Maintenance of Fleet Vehicles			2,697	2,329
Transition 1 Total			6,230	5,600

Emissions from commuting are higher than those from the total fuel use of our fleet. Home and agile working has reduced commuting emissions substantially, but over half of our commuting emissions are associated with schools-based staff where the potential for home working is more limited. Refuse vehicles and other larger vehicles make up over half of our fleet fuel emissions, these are vehicle categories where there is currently limited availability of ULEV alternatives. Employee business travel was a small element of transport emissions, even before significant post COVID reductions. The embodied emissions from the manufacture and maintenance of fleet vehicles are a substantial element of this transition, but we have less direct control over these emissions.

How do we intend reach Net Zero?

Action Area	Ref	High Level Action	What Does Net Zero 2030 Look Like?
Vehicle Charging Infrastructure (Non-Depot)	T1	Develop a plan for non-depot charging infrastructure for fleet and staff personal ULEV vehicles at key sites	Sufficient Charging Infrastructure provided at council buildings for staff needs
Fleet Decarbonisation Plan	T2	Develop a Plan for a low carbon fleet and resource its implementation by building costs into Corporate Medium Term Financial Plan	All vehicles in Fleet are Ultra Low Emission Vehicles (ULEV)
Low Carbon Depot	T3	Develop and resource a low carbon Depot	Sufficient charging capacity for all fleet vehicles, with on-site zero carbon power generation and storage maximised.

New Fleet ULEV Vehicles	T4	Replace small vehicles in fleet with ULEV in phased way in line with available space, grid capacity and infrastructure (prior to opening of new Depot)	All vehicles in Fleet are Ultra Low Emission Vehicles (ULEV)
ULEV Vehicle Procurement	T5	Ensure procurement arrangements are in place to deliver the low carbon fleet plan. Including developing ownership/rental models and opportunities for regional and national collaboration.	Procurement models reflect costs and properties of ULEV vehicles
Staff Active Travel	T6	Investigate and identify staff demand for active travel and consider business case to meet this demand e.g. showers at main sites, secure shower facilities, safe storage and e-charging for cycles.	Active Travel infrastructure, such as cycle storage and changing facilities, available at sites with high demand
Home and Agile Working	T7	Embed the new operating model and assess its impact in terms of decarbonisation.	Commute travel distance and staff business miles are minimised through home and agile working and utilising digital technology/mobile worker functionality.
Grey Fleet/Business Travel	T8	Identify solutions for grey fleet use of personal vehicles delivering council services e.g. Social Services.	Corporate pool or hire ULEV vehicles are available for business travel wherever business need justifies.
Staff Travel	T9	Explore how staff can be encouraged to switch to their personal vehicles ULEV.	Provide and actively promote support and incentives for staff travel shifts from cars to public transport, vehicles sharing, walking and cycling wherever possible. Where not possible provided support and incentives to use personal ULEV.

Our challenges, opportunities and risks

- Low carbon alternatives are not currently available for many of the large vehicle types that we use to deliver services. Even when vehicles are on the market there are issues about real world performance; particularly in relation to (i) the use of auxiliary equipment that draws on power such as lifting and heating and (ii) the topography of the local area, hill starts and climbs are a major power drain. There are examples of local authorities procuring vehicles that were not able to deliver the service. We continue to trial large ULEV vehicles on the ground.
- Smaller ULEV vehicles are being added to the fleet, addressing constraints around funding models and charging capacity remains a challenge.
- Full fleet transition will need to address significant constraints around physical space and grid charging capacity.
- Home and agile working have led to significant reductions in commuting and business travel miles, further reductions will be restricted by requirements of staff to be on site. For these journeys modal shift to public transport, active travel and ULEV vehicles all have different challenges to address.
- We continue to develop our ULEV strategy and work on collaborative procurement arrangements for ULEV.
- Significant decisions about the replacement of the refuse fleet will need to be taken soon as all refuse vehicles are coming to the end of their working life at the same time.

Case Study: Community Meals ULEVS

The Community Meals service managed by the Social Services provides a daily hot meal to over 160 vulnerable adults living in Blaenau Gwent. The service has used the introduction of new Welsh Government funded electric vehicles in July 2023 to develop an intergenerational cross curriculum project with learners from Abertillery Learning Community Secondary campus. The learners have worked alongside the Community Meals team to design and develop the new branding and logos including designing the artwork on the new vans. The learners also came along to visit the service to see the operation and the nutritional importance of the meals. They also spent time with the Council's transport team learning about the benefits of the service moving to electric vehicles and impact on the environment.



6.2 Nature Based Solutions (Proportion of Footprint: -4%)

Carbon Data

	tonnes CO ₂ e/year
Forest land	-2,350
Grass land	-55
Settlements	919
Nature Based Solutions Total	-1,486

Transition emissions as a percentage of our 2019-20 Carbon Footprint Baseline

-4% (is *net negative* because it removes carbon from the atmosphere by absorbing it into habitats and storing it)

What does the transition include?

Nature Based Solutions cover the carbon impact of all our land holdings, including both natural and developed areas.

Where do emissions come from in this Transition?

There are two main elements to the carbon impact of our land holdings:

- **Carbon Sinks** are the total amount of carbon stored in plants and soil.
- **Carbon Sequestration** is the annual net change in the amount of carbon stored in carbon sinks.

Using sequestration for large scale carbon offsetting is not a viable way of achieving Net Zero, as ecosystems do not have unlimited capacity to remove carbon from the atmosphere. The main role of nature based solutions will be balancing a small residue of unavoidable emissions that there is currently no way to decarbonise. It is also worth noting that nature based solutions will continue to cool the planet long after the other transitions are completed, therefore, their long-term impact is much larger than their contribution to Net Zero 2030.

Protecting our existing carbon sinks is a vital element of this transition, the potential carbon impact of the release of even a tiny proportion of these carbon sinks through land use change is enormous. NRW estimated that the total carbon stored on their estate is 309 times their annual carbon sequestration.

We currently only have data covering 53% of our landholdings, although these likely make up a much higher proportion of our total sequestration because they include many of our largest wooded areas, which have the highest sequestration potential.

How do we intend reach Net Zero?

There are three main types of nature based solutions:

- **Protect.** Avoid emissions by protecting existing habitats from land use change.
- **Manage.** Enhance carbon sinks and increase sequestration from existing land types.
- **Restore.** Restore native conditions of habitats to increase sequestration.

It is important to note that while nature based solutions have real carbon benefits, the benefits to biodiversity and well-being are greater. Therefore, carbon calculations should not be allowed to disproportionately dominate decision making about how and where nature based solutions are delivered. This is reflected in the maxim 'right tree, right place, right reason', just planting as many trees as possible will not achieve the best outcome for nature, in some situations other habitat types are more appropriate.

Action Area	Ref	High Level Action	What Does Net Zero 2030 Look Like?
Sequestration Data & Mapping	N1	Bring together and optimise existing internal and external information and mapping (supported by wider corporate GIS improvements) to give better understanding of our current sequestration position and the potential for further development.	GIS and other data give us strong understanding of opportunities for nature based solutions across borough in woodland, peat and other habitats.
Policies impacting Nature Based Solutions	N2	Strengthen existing actions and policy with specific reference to, and targets for, carbon sequestration/climate impact, including the replacement Local Development Plan.	Policies across council impacting Nature Based Solutions are strengthened and include explicit assessment of climate impacts.
Renewables & Nature Based Solutions	N3	Investigate the potential for renewable energy projects to also improve carbon sequestration and how this could be integrated into future schemes	Renewable energy schemes in BG are designed to also maximise benefits to nature.
Carbon Impact of Planning	N4	Include explicit references to, and /or figures for, carbon impacts as part of environmental assessment of planning proposals	Environmental assessments of planning proposals include explicit assessment of carbon impact
Land disposals/ acquisitions and Nature Based Solutions	N5	Ensure that carbon impact of land-use changes and disposals/acquisitions in our own estate are assessed and where possible put in place specific carbon sequestration requirements e.g. requirements in leases and community asset transfers	Requirements in place to protect and enhance carbon and nature benefits whenever council acquires, disposes or changes use of land
Enhancing Carbon Benefit	N6	Investigate potential for programmes enhancing carbon	Council land holdings managed to maximise

of Our Land Holdings		sequestration and biodiversity from specific land-use types in our estate. e.g. schools, business parks.	benefits to climate and nature, with programme of improvements to further enhance climate and nature value
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Our challenges, opportunities and risks

Large scale tree planting is an important element in most proposed responses to the climate emergency. National government are setting ambitious targets, Welsh Government target is for 86 million trees in the next decade. Our current activity in this area is largely based on a reactive approach with a focus on maintaining existing provision and meeting legal standards, reflecting current levels of resourcing. Our Tree Policy aims for ‘zero net loss of trees under our control within any 5-year period’ and to take advantage of any opportunities that may arise to increase this coverage, which reflects the level of resources currently available. Across Wales and England that levels of forestation have remained largely unchanged for the last 20-30 years, despite ambitious paper targets for increases (Scotland has achieved significant increases in the same period through significant policy change). Blaenau Gwent currently has tree coverage above the Welsh average.

It is important that actions are driven by wider range of factors than just the number of new trees planted. Unfortunately, there are many examples of mass tree planting schemes with extremely high failure rates, and even if trees do not die there is still significant potential for variation in the carbon performance dependent on the type of planting and management, in addition to variable impacts on biodiversity. There are also significant carbon benefits to enhanced management of existing trees and other habitat types. The core woodlands management budget is £25-30k per annum. The reality is that this budget can cover emergency work only and probably not all of this.

Mostly our activity is based on external funding and as a result reflects the priorities of these programmes, the largest being Greater Gwent Green Grid. They both include direct tree planting and other activity that does have a sequestration impact, but sequestration is not the explicit purpose of the activity.

We mainly operate from individual management plans for nature reserves. This could lead to potential opportunities being missed, such as landholdings outside of these areas, and also the cumulative impacts of habitat types such as grassland or highway verges. The Blaenau Gwent Nature Recovery Action Plan, currently being developed, may help to address this.

Peat covers only 3% of the world’s land but stores one-third of all soil carbon. The carbon it contains is highly vulnerable. Undamaged peatland sequesters carbon, but damaged peatlands are often net emitters. Currently we have limited understanding of our potential for peatland restoration and any development on peatland could have very significant negative carbon impacts.

6.3 Procurement Goods *(Proportion of Footprint: 14%)*

Procurement Goods Focus (Received Climate Group Meeting April 2023)

Carbon Data (19/20 Baseline)

	tonnes CO2e/year
IT & Office Machinery	2,149
Equipment and Furniture	1,173
Food and Drink	958
Machinery	355
Paper and Printing	202
Soap and Cleaning Materials	67
Water Supply	46
Glass and Metal Products	32
Clothing	19
Procurement Goods Total	5,001

Transition emissions as a percentage of our 2019-20 Carbon Footprint Baseline

14%

What does the transition include?

What we purchase as an organisation and includes key items such as clothing, food, IT, machinery, equipment and furniture.

Where do emissions come from in this Transition?

See data above, these figures are **spend based emissions** calculated from our financial spend and national average carbon intensity factors. These factors are the average amount of carbon emitted per pound of money spent in each of these categories. While spend based emissions can give a reasonable estimate of the relative contributions of different product categories to our carbon footprint, they cannot accurately detect changes in our performance from year to year. As a result, we will not update our spend-based emissions figures on an annual basis and will use alternative measures to show our progress towards Net Zero in this transition, drawing on existing data from other organisations and studies.

How do we intend reach Net Zero?

Action Area	Ref	High Level Action	What Does Net Zero 2030 Look Like?
Embedding Carbon in Procurement Policy	PG1	Make decarbonisation a key component of revised Procurement Policy, including clear statements of key elements such as whole life costs, end of life arrangements etc.	Minimise carbon impact of procurement by making whole life costs and circular economy principles important element of procurement process.

Decarbonising Procurement Adopted as Priority for Corporate Decision Making	PG2	Formally adopt decarbonisation of procurement as a priority at a corporate strategic decision-making level, including, Strategic Commissioning and Commercial Board which considers all contracts awarded over £75,000 and Medium Term Financial Strategy.	Minimise carbon impact of procurement by making whole life costs and circular economy principles important element of procurement process.
Carbon Impact of All Significant Contracts	PG3	All significant contracts (above £75,000 SCCB threshold, with discretion to include lower value if good reason to believe will have significant carbon impact) should identify what the most significant carbon impact(s) are from the contract. Wherever possible we should identify suitable benchmark target(s)/criteria to measure performance against, and where possible/relevant this should be incorporated into contract criteria.	In all major procurement decisions, the most significant carbon impacts are identified, and targets are set to monitor performance
Engaging Local Suppliers with Climate Change	PG4	Develop long-term engagement plans to grow decarbonisation capacity of (local) suppliers in key areas.	Actively support local providers of low carbon products in key areas
Procurement Decarbonisation Deep Dives	PG5	Ongoing programme of decarbonisation initiatives targeted at key procurement areas, supported by additional resources to explore supply chains and develop specific actions/plans. These deep dives could be initiated through Annual Procurement Review. Service areas should be encouraged to develop relevant proposals.	We have significantly reduced carbon impact of all major types of goods purchased based on detailed understanding of our needs and supply chains

Our challenges, opportunities and risks

- Carbon footprint calculations for large construction projects are becoming more common and Welsh Government is encouraging this type of reporting. However, for most procurement decisions it is not possible to produce single definitive carbon figure but it should be possible to produce a decarbonisation benchmark for most decisions.
- General principles around circular economy are relevant across all our procurement but will require specialist knowledge of officers working in specific service area to apply them.

- In many cases we are already doing things in procurement that reduce carbon, we need to make sure that we promote awareness of decarbonisation principles and ensure having meaningful impact on decisions.
- Sweating assets and minimising material throughputs is good for decarbonisation and finances.
- Not all decarbonisation options will lead to immediate savings, the challenge of higher up-front costs for longer lasting products is a familiar one.
- Need to make time/resources available to look at the bigger picture of procurement not just single purchasing decisions and make sure we review and strengthen impact/quality of decarbonisation decision making.
- Deep dives are the key to understanding the impact but need to identify format and resources required.
- Role of collaborative procurement, do we understand carbon impact of regional and national procurement arrangements, and can we influence them where needed?

Current Status of Transition

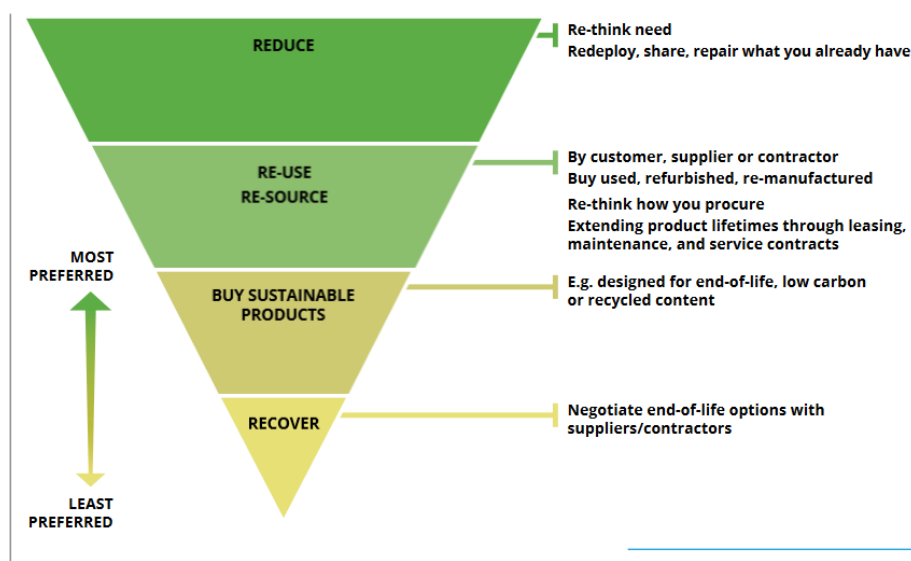
Carbon is built into reports on procurement for Strategic Commissioning and Commercial Board and supporting guidance developed.

Net Zero is part of revised Procurement Policy.

Carbon Reduction Plan required from suppliers for contracts above £5million.

<https://www.gov.wales/wppn-06-21-decarbonisation-through-procurement-taking-account-of-carbon-reduction-plans-html>.

Welsh Government is encouraging all Public Bodies to, where possible, start moving beyond current Tier 1 spend based reporting of carbon emissions, which are not suitable for monitoring the impact of our actions, to Tier 2 reporting based on carbon data from suppliers. However, outside of substantial construction projects this is unlikely to be possible and/or proportionate to the level of effort required, certainly in the short to medium term. Therefore, Tier 2 reporting is most immediately relevant to the Procurement Construction Transition. This transition will require an alternative approach that does not require complex calculations of the definitive carbon cost of every product we procure.



This alternative approach will be based on the sustainable procurement hierarchy. As the hierarchy shows choosing low carbon products will likely not be the main method of addressing carbon in procurement. The simplest way to think about the procurement hierarchy is that it aims to reduce both the volume of new materials entering our operations and the volume of material leaving the system as unrecoverable waste. Both elements have carbon costs because of the resources and energy needed to produce new, and tied up in existing, materials. This is the basis for the circular economy, keeping the same materials in circulation being reused for as long as possible.

In many cases we may already be taking actions in line with the procurement hierarchy because reducing material and energy consumption will also lead to financial savings. There are also potential benefits that increased use of hire and leasing arrangements reduces upfront cost of procurement. However, in other cases there may be increase costs associated with more durable and/or lower carbon products.

Options for Next Steps *(Approved by Climate Group)*

Measuring Progress – Alternatives to Spend Based Emissions

Decarbonisation Benchmarking

A decarbonisation benchmarking approach would be based on identifying a relevant, easy to measure, benchmark serves a good indicator to the largest carbon impact of that procurement exercise without requiring complex calculations or detailed technical specifications. For example, the exact carbon footprint of our laptops is very difficult to calculate given the range of materials and supply chains involved, but much simpler measures such as their energy efficiency certificate and their active use life span capture major elements of their overall carbon impact. Benchmarks of this type (other examples could include all lighting be LED, % of recycled material used in product, % of products that reused/refurbished etc.) would form the basis of reporting for this transition.

Already introduced a decarbonisation question for all procurement reports, propose that identifying a decarbonisation benchmark and a review date to check that benchmark achieved should be key elements in this. These Decarbonisation Benchmarks should be based, where possible, on publicly available information about current standards in the relevant sector and should represent an ambitious target rather than a minimum level. The [Local Authority Sustainability Procurement Toolkit](#) also provides many examples of potential benchmarks. These benchmarks could also be a decision-making criterion in the procurement process, by requiring contracts to meet the benchmark standard and giving credit to those who go beyond this standard.

As an initial pilot all goods contracts over £75,000 would be required to identify a Decarbonisation Benchmark from now on (there are typically around 12 contracts annually of this type), with the intention of expanding this to all goods contacts over £25,000 as soon after this initial phase as possible.

- 1. All procurement reports for goods orders over £75,000 (where a carbon impact identified) to include a Decarbonisation Benchmark, expanding to all goods orders over £25,000 after initial phase.**

2. **Where a Decarbonisation Benchmark identified should be part of specification and/or used as a selection criterion.**

Benchmarking Workshop

Assessing the decarbonisation implications of procurement and setting benchmarks will be a learning process. Guidance on the general principles of circular economy and reducing material and energy consumption in this transition can assist officers with the reporting template. However, given the range of things that we buy there is not a one size fits all model for decarbonising procurement across the authority. Decarbonisation Benchmarking will be informed by officers' knowledge of their own areas of work. It is also worth recognising that we are already taking actions that reduce the carbon footprint of our procurement. Both with explicit reference to climate change, and because officers are already taking actions that reduce material and energy consumption from procurement for non-climate reasons including cost savings.

To kick start the learning process around completing decarbonisation reporting requirements and benchmarking for procurement, we will organise a workshop with procurement and service area staff identified as being involved in relevant upcoming procurement activity. This would provide an opportunity for staff to come together to discuss how reporting and benchmarking would work, by looking at upcoming procurement exercises and to share examples of past specifications that have reduced carbon impact.

3. **Hold workshop for staff who likely to be involved in producing procurement decarbonisation reports and benchmarks.**

Reporting

Important not just to collate procurement decarbonisation benchmarking for annual report but also to assess collective impact and to drive improvement, share good practise and track financial impact of decarbonisation actions. Recognising as a new area of work, reporting will not be perfect immediately. Therefore, it is important to look at the overall picture of activity and helping to strengthen quality of reporting over time. Also integrate decarbonisation into the forward-looking processes such as the Annual Procurement Strategy, so incorporate carbon as well as financial impact of planned activity.

4. **All Decarbonisation assessments and benchmarks should be collated on ongoing basis for Annual Net Zero 2030 Report and reviewed by Climate Group and/or Strategic Commissioning and Commercial Board.**
5. **Make Decarbonisation integral part of forward planning process for procurement.**

Deep Dives

We cannot rely solely on assessing procurement on a case-by-case basis to reach Net Zero. Decarbonising procurement is about more than just choosing the lowest carbon product at the time of purchase, other factors such as how the product is used and how long it lasts can be more impactful on our carbon footprint. We can take a more systematic look at how to reduce this carbon impact through a deep dive into the product categories identified as making the greatest contribution to our carbon footprint (see table above). The same principles still apply to these deep dives, that this does not necessarily require complex

carbon calculations, in the first instance we should look to apply publicly available carbon information to understand where we can have the greatest impact. An initial pilot will help to understand the time and resources needed to conduct deep dives and implement the changes identified.

- 6. Scope and carry out deep dive into one of our highest carbon impact product types, possibly computing and other appliances.**

6.4 Procurement Services *(Proportion of Footprint: 37%)*

Carbon Data (19/20 Baseline)

	tonnes CO₂e/year
Social Care and Health	5,845
Education	3,806
Pensions/Investments	1,461
Public Administration	1,431
Legal and Consultancy Services	590
Computer Services	145
Post and Telecommunications	120
Miscellaneous	95
Procurement Services Total	28,640

Transition emissions as a percentage of our 2019-20 Carbon Footprint Baseline

37%

What does the transition include?

This transition includes the emissions related to services that are delivered by us, or on our behalf.

Where do our greatest emissions come from in this Transition?

The three largest emissions sources within this transition are social care, schools and pensions. The high emissions in this transition are mainly the result of a high volume of low carbon intensity actions. As a result, the source of the carbon emissions in this transition are less concentrated in hotspots, and the level of influence that we have over many of these emissions is significantly lower, than for other transitions.

How do we intend reach Net Zero?

Action Area	Ref	High Level Action	What Does Net Zero 2030 Look Like?
Supplier Climate Pledge/Commitment	PS1	Initial engagement with suppliers to raise awareness of, and secure commitment to, decarbonisation via signing of pledge/joining scheme (ideally one also being used by other Welsh public sector bodies).	Engaging with suppliers to reduce the carbon impact of services they provide to us

Social Services Supplier Climate Engagement	PS2	Social services to undertake long-term engagement to support suppliers to build their capacity to decarbonise key areas of their operations, such as transport and energy.	Social service providers making good progress towards Net Zero from their energy use and transport.
Education Supplier Climate Engagement	PS3	Education to undertake long-term engagement to support schools to build their capacity to decarbonise key areas of their operations, such as transport and energy.	Schools have good understanding of their carbon footprint and working together to achieve Net Zero
Local Renewable Supply (Non-estate)	PS4	Investigate the possible benefits of Power Purchase Agreement to secure low carbon electricity by directly investing in renewable generation supply, with clear emphasis on local capacity and links to Energy Prospectus.	Supporting renewable generation schemes in Blaenau Gwent, with emphasis on community ownership, including through purchase of zero carbon electricity for use by council
Pensions Carbon Impact	PS5	Consider whether we should ask the Greater Gwent Pension Fund to develop a more proactive approach to accelerating the transition to Net Zero through its investment strategy, such as divestment policy. Starting with requesting position statement from Greater Gwent Pension Fund.	Pension contributions are not supporting fossil fuel extraction and are supporting local investment in Net Zero projects

Our challenges, opportunities and risks

Decarbonising social care providers and schools transport and energy use are key to this transition, but this will be very challenging for many providers, requiring long-term engagement and support.

Collaborative procurement is very important. The Gwent Regional Partnership Board plays an important role in social care, foster and domiciliary care big element of this. Already perhaps 20-25% via collaborative procurement and this is only going to increase in coming years. We are midway through an 8-year contract with Caerphilly. Cross authority procurement of services helps to avoid duplication (reducing inefficiencies and carbon impact), providers have single point of contact which helps with engagement on issues such as decarb, and also builds resilience in system, for example, where we need cover for transport.

Domiciliary care is a big area due to transport for carers. Due to the geography of Blaenau Gwent we are able to commission local care staff and create walking rounds wherever possible. However, Covid has shown the limits to this, sometimes carers need to travel by car. Beyond this there are already cost pressures from achieving the real living wage, we will need to support providers to seek capital investment into things like electric cars. Probably the case that the market is not currently ready to respond to the decarbonisation agenda.

We have had contact from care homes about whether they can join LA purchasing to achieve savings on energy bills, there could be a green element to this if developed. Similar approach could be applied to engaging with care homes supply chains and building local resilience across other decarbonisation issues, e.g. food. This is something that will require planning and capacity to engage providers.

Re:Fit is important element of schools transition. Recognise that uptake has been low in the past, think that the future revenue implications were the concern for schools. A contributing factor here may have been that last round came at a time of high turnover in school management, heads may not have wanted to leave this cost legacy for the next regime. Feel that improving relationship with school management means that better placed for future rounds. Also important that schools get quality of information to understand impact of Re:Fit, including separating out cost and carbon impacts, particularly given rising energy prices. Larger WG capital programmes are planned processes, think decarbonisation can/will be built in.

Almost all schools are part of maintenance SLA. We have a good understanding of our estate in this context, programmes of maintenance and minor works in place. On New build there have been returns to WG with Net Zero proposals at Glyncoed and Welsh medium school.

There were already a limited number of suppliers for home to school travel prior to COVID, they have been badly hit by the collapse of demand for buses during the rest of day due to the makeup of contracts for morning and late-afternoons only, which means that companies lost a lot of drivers as they can only offer limited hours. The lack of suppliers also constrains our ability to optimise routes. This is before considering again the issue that largely local suppliers so constrained in awareness of, and ability to invest in, ULEV vehicles as they come on to the market.

The Greater Gwent Pension Fund adopted a Climate Change Policy in 2019, which outlines that their 'overall policy objective is to lower the 'carbon footprint' of the greenhouse gas emissions of our investments, so that we are either in line with or, ideally, below the international targets to keep global warming well below 2°C.' Ultimately, we do not directly control either policies or investment decisions of the Pension Fund, but we are represented on the Board along with other public sector partners, so can continue to influence following recent resolution passed by council.

6.5 Procurement Works *(Proportion of Footprint: 10%)*

Carbon Data (19/20 Baseline)

	tonnes CO ₂ e/year
Construction and Maintenance	3,544
Procurement Works Total	3,544

Transition emissions as a percentage of our 2019-20 Carbon Footprint Baseline

10%

What does the transition include?

This includes the life cycle embodied emissions from the construction, maintenance and demolition of our buildings and other infrastructure (e.g. roads) (it does not include the energy use from the operation of our buildings which is part of the heat and electricity transitions).

Where do emissions come from in this Transition?

Most procurement works emissions are associated with capital expenditure with external contractors on major construction projects. The life-time embodied energy in complex commercial buildings may be equivalent to 30 times their annual operational energy use. There are several different elements to these emissions including: embodied emissions (the emissions associated with the energy used in the manufacture of products), product miles and material throughput (the total volume of material used). Actions which reduce emissions related to one element do not automatically reduce other elements or buildings direct energy use, in fact they may even increase emissions from another element. Which is why a whole life-cycle understanding of carbon impacts is important.

How do we intend reach Net Zero?

There are two main ways we can address these life-cycle emissions. Firstly, we can use our (and collective public sector) purchasing power to encourage the market to move towards low carbon options (including as a first step making information about life-cycle emissions available to purchasers). Secondly, where possible to reduce our total consumption, this could be total material throughput or product miles.

Action Area	Ref	High Level Action	What Does Net Zero 2030 Look Like?
Impact of major construction projects on territorial climate emissions	PW1	Assess the impact of major projects on territorial emissions in Blaenau Gwent e.g. projects that will create significant new energy use or travel demand outside of our own organisational footprint.	All major construction projects are planned to minimise emissions for energy use and travel demand during their lifetime operation

Net Zero New Build	PW2	Commit that all new builds will be designed and constructed to Net Zero standards. Only in exceptional circumstances will projects proceed without the requirement being met. Where the standard has been judged to be unachievable, the barriers will be set out in detail in writing.	All new builds designed and constructed to Net Zero standards
Carbon Costs of Building and Maintenance Works	PW3	Commit to consider carbon costs (the emissions associated with undertaking works and future energy use) in procurement of building and maintenance works, including setting appropriate carbon standards. Integrated into decision making as part of procurement review.	Life cycle costs and circular economy principles inform building and maintenance budgets and programmes to minimise carbon impacts

Our challenges, opportunities and risks

- Significant progress is being made on improving the carbon performance of our new buildings. However, there are still a number of challenges:
- Funding requirements have an impact. Funders have negative reactions to the higher costs of zero carbon build. Tight deadlines significantly constrain innovation. Both short lead in and tight spend profiles mean that we are often condensing design processes more than we would like at moment.
- Need to look at lifetime use of building. There are also potential costs to occupiers in long term. New tech requires maintenance, especially as these are often new systems.
- Already concerns about the number of companies and people with the skills to carry out this work. If large number of organisations start to carry out similar decarbonisation work at the same time, then costs will rise and capacity may not meet demand.
- Measuring carbon impact is not straight forward, and there is not a clear single definition of what it means to be a zero-carbon building. Reliant on emerging national guidance and product information.
- For existing buildings incorporating these life-cycle factors into decision making will have financial implications. There is a strong downward pressure on costs, and this would require a culture change, especially after 10+ years of austerity. Improving any of these elements will have significant up-front costs, even when there are long-term savings.

6.6 Electricity *(Proportion of Footprint: 11%)*

Carbon Data

	tonnes CO ₂ e/year				Change From Base Year	Change From Last Year
	19/20	20/21	21/22	22/23		
Metered - Buildings	1,792	1,272	1,265	1,171	-35%	-7%
<i>Metered - Buildings Aneurin Leisure</i>	572	279	374	343	-40%	-8%
Unmetered - Street Lighting	968	870	700	642	-34%	-8%
Electricity Total	3,332	2,420	2,339	2,156	-35%	-8%

Transition emissions as a percentage of our 2019-20 Carbon Footprint Baseline

11%

What does the transition include?

All electricity used by council buildings and infrastructure.

Where do our greatest emissions come from in this Transition?

Around two thirds of our current electricity use is associated with our buildings, with the other third from street lighting.

How do we intend reach Net Zero?

Action Area	Ref	High Level Action	What Does Net Zero 2030 Look Like?
Carbon Impact of Devices that use electricity	E1	Commit to using carbon data (energy standards and life-cycle costs) to inform procurement decisions. Review Procurement Strategy and arrangements to align to the Council's Zero Carbon commitment	All electrical devices used by council meet high energy efficiency standards and purchasing decisions minimise life cycle costs
Street Lighting Decarbonisation	E2	Street Lighting Strategy – Develop a plan and targets for future energy reductions including reaching 100% LED lighting no later than 2030.	Energy use from street lighting minimised through use of LED etc.
Maximising Renewable	E3	Zero Carbon Electricity. Develop a plan and targets for ensuring the	Generation of zero carbon electricity on council estate

Generation on our Estate		Council maximises its use of renewable energy, through installing renewables.	maximised on basis of clear understanding of potential capacity
Electricity Demand Reduction	E4	Energy Policy- ensure energy demand reduction is aligned to Council's Zero Carbon commitment.	Electricity demand minimised through use of technology, data and behaviour change

Our challenges, opportunities and risks

Over the last four years' total carbon emissions from our electricity consumption have fallen by 39%. The majority of this reduction has been due to a fall in the carbon intensity of grid electricity (the amount of carbon produced per unit of energy). Our electric energy consumption fell by 6.5% over the same period.

Generating electricity from building mounted renewables, we currently have around 350kwh of installed capacity, including work with Aneurin Leisure on Sports Centre. There can be viability issues on delivering return on upfront investment, factors such as asbestos and roof strength add costs, and some buildings unsuitable due to issues such as roof alignment.

Potentially large amounts of electricity could be generated from non-building mounted renewables. Investment could have wider community benefit for Blaenau Gwent. But there are limiting factors around matching generation to demand, grid capacity if we do need to export energy and that many of our land holdings are potentially vulnerable to vandalism due to location.

Demand reduction could be achieved through automation and data/performance systems to effectively reduce electricity usage, but this requires staff and resource capacity.

Majority of street lighting converted to LEDs, already realised carbon and cost saving and on track to complete full conversion.

Significant challenges around the increased supply that will be required by electrification to achieve Net Zero for transport and heat transitions, both in terms of grid capacity and matching supply and demand.

6.7 Heat (Proportion of Footprint: 16%)

Carbon Data

	tonnes CO ₂ e/year				Change From Base Year	Change From Last Year
	19/20	20/21	21/22	22/23		
Natural Gas Heating	3,942	3,725	3,483	3,512	-11%	1%
<i>Natural Gas Heating Aneurin Leisure</i>	1,152	798	1,076	967	-16%	-10%
Biomass Heating	60	67	75	75	25%	0%
Heat Total	5,154	4,590	4,634	4,554	-12%	-2%

Transition emissions as a percentage of our 2019-20 Carbon Footprint Baseline

16%

What does the transition include?

Includes all energy use for heating (and cooling) space and water in our buildings.

How do we intend reach Net Zero?

Action Area	Ref	High Level Action	What Does Net Zero 2030 Look Like?
Heating Demand Reduction	H1	Energy Policy - Utilise data and controls to reduce heat demand.	Heating demand minimised through use of technology, data and behaviour change
Decarbonising Heating	H2	Develop a strategic heating Decarbonisation plan to include replacement of existing heating systems and associated retrofitting of buildings with net zero carbon alternatives by 2030 including the investment required	All buildings retrofitted (where appropriate) to improve energy efficiency and zero carbon heating systems installed
District Heating Networks	H3	District heating networks. Set date for future review of whether developments in technology allow for additional networks in Blaenau Gwent	District Heating Systems based on Zero Carbon heating technology developed where viable opportunities emerge

Our challenges, opportunities and risks

Heating accounts for most of our buildings energy emissions and is the most challenging element of our entire Net Zero journey. Gas cannot be a zero-carbon fuel, so unlike the electricity grid, it is not possible to decarbonise heating without major infrastructure changes for end energy users.

Modern condensing boilers have achieved significant carbon reductions and effective action is about more than just replacing boilers. Further significant carbon savings are possible, including some options with a positive rate of return on investment:

- Retrofitting to improve building energy efficiency with well insulated high-performing buildings.
- Optimise the use of buildings and space in them to reduce demand by integrating decarbonisation into estate strategy, agile working etc.
- Heating (and cooling) demand reduction. Technology/automation supported by staff engagement, including setting corporate standards for temperatures across estate.

However, these measures fall well short of achieving Net Zero, which will require a shift away from gas boilers. This will be a step change in resources as the 2030 target requires a rate of replacement of heating systems that far exceeds current rates of boiler replacement. Alternatives include:

- Heat pumps are more efficient in providing heat per unit of energy consumed than gas boilers, but there are two big barriers to their adoption (i) gas is currently (and has historically been) significantly cheaper per unit of energy than electricity and (ii) gas boilers can produce a much greater total quantity of heat than heat pumps, so are much better able to heat energy inefficient buildings, which will often be expensive, or even impossible, to retrofit for heat pumps. Recent procurement exercises for schools found that heat pumps would be many more times expensive than a modern gas boiler.
- Hydrogen has often been proposed as a substitute fuel to replace gas, but there are significant questions about whether this will ever be technically viable at the national grid scale. The extent to which the existing gas grid would have to be modified to run on hydrogen is not clear, but it would certainly require significant changes to both the network and boilers. There are also serious doubts that powering the existing gas grid would be the most efficient and climate friendly use of hydrogen. Hydrogen may have a part to play in specific local schemes with high heating loads like major public buildings.
- Biomass can play a role in replacing gas, as it does in The Works heating network. However, biomass does not have the capacity to replace more than a small part of the total energy provided by the gas grid.

District Heating Networks, like The Works, are not a distinct technology, rather they are a way of achieving economies of scale by linking multiple buildings to a single heating system (which could be gas, hydrogen, biomass or heat pumps).

6.8 Waste (Proportion of Footprint: -22%)

Waste Transition Focus (Received Climate Group Meeting July 2023)

Carbon Data

	tonnes CO ₂ e/year			
	2019/20	2020/21	2021/22	2022/23
Recycled/Composted	-11,828	-11,760	-12,205	-11,504
Waste to Energy	3,611	4,078	3,833	3,762
Landfill	0.3	0.1	0.2	0.1
Waste Total	-8,216	-7,682	-8,372	-7,742

Note: The percentage change calculations for waste have been removed because the figures would be misleading. For example, this year despite an increase in the recycling rate, the total carbon savings have reduced reflecting a small reduction in the total volume of waste entering the system. Ultimately the aim for this transition is for the total figure to reach Zero when Zero Waste is achieved, rather than generating ever increasing negative figures.

Transition emissions as a percentage of our 2019-20 Carbon Footprint Baseline

-22% (the carbon savings from treatment of municipal waste are equivalent to 15% of our total carbon footprint)

What does the transition include?

This transition includes the emissions associated with the treatment of municipal waste collected by the authority.

Where do emissions come from in this Transition?

These emissions are an estimate of the net carbon impact of the treatment of the municipal waste we collect. Landfill is by far the most carbon intensive method of disposal, but only a very small fraction of our waste is landfilled. Recycling/composting save carbon by eliminating the need to use new materials in manufacturing. Waste to energy releases carbon, but overall, our waste has a significant negative carbon impact.

	Recycled/Composted		Waste to Energy		Landfill	
	Tonnes	tCO ₂ e	Tonnes	tCO ₂ e	Tonnes	tCO ₂ e
21.22	19,955	-11,827	11,158	3,611	0.65	0.37

Technically these figures are not part of our Welsh Government Net Zero Public Sector carbon footprinting. This is because this carbon saving contribution towards Net Zero is captured in the carbon footprinting of other organisations who treat the waste, so including it in our footprint would be double counting. However, how our municipal waste is treated is still an important element of our overall contribution to Net Zero.

The waste related emissions reported in our carbon footprint are very small. We estimate that the waste we generate ourselves is around 5% of the total volume of municipal waste. The footprint also includes a small quantity of emissions associated with the onward transport of waste after collection for disposal. (The emissions from our refuse fleet are significant but are part of the transport transition).

How do we intend reach Net Zero?

Reaching Net Zero means achieving Zero Waste. There is a close alignment in this transition between carbon reduction and existing service priorities and targets. As a result, as the table below shows, there has been significant progress in recent years in reducing the carbon impact of our waste, although gains have plateaued in the last couple of years.

Year	Waste Tonnes	Recycled/Composted	Waste to Energy	Landfilled	Carbon Saving
16.17	31,537.20	56.9%	43.1%	0.0007%	-4,076.93
17.18	31,661.22	57.7%	42.2%	0.0008%	-4,847.34
18.19	30,044.09	59.8%	40.2%	0.0017%	-7,421.34
19.20	31,138.92	64.1%	35.8%	0.0021%	-8,215.79
20.21	31,410.26	62.0%	37.7%	0.0021%	-7,682.49
21.22	31,138.92	64.1%	35.8%	0.0021%	-8,215.79

Action Area	Ref	High Level Action	What Does Net Zero 2030 Look Like?
Zero Waste – Carbon Impact	W1	Zero Waste. Deliver Waste Management and Recycling Strategy	Achieving or exceeding Welsh Zero Waste Targets, with increased use of 'closed loop' operations and 'up-cycling'
Carbon Impact of Onward Waste Transport/Treatment	W2	Minimise environmental impact of onward treatment of waste	Onward transport of municipal waste for treatment minimised
Carbon Impact of Commercial Waste Service	W3	Commercial Waste Service. Develop upgraded service.	Achieving or exceeding Welsh Zero Waste Targets
Promoting waste reduction with households	W4	Develop stronger 'reduce' element to household waste communication	Significantly reduced volume of waste entering municipal waste stream

Our challenges, opportunities and risks

Progress has been the result of actions at the bottom levels of the waste hierarchy (below), which correspond to 'traditional' local authority municipal waste activities around the point of disposal. Further progress is possible through continued activity to increase the range of materials that can be recycled and behaviour change to ensure that residents recycle all the materials they can and contamination of waste is minimised.

However, the volume of waste entering the system has remained essentially unchanged. Achieving Zero Waste will require actions at the top levels of the waste hierarchy, which tends to involve moving further upstream in the waste process, where local authority waste services have less direct influence. This requires new activity related to the circular economy, which we are now moving into but does not have the same established policy and budget frameworks.

The Climate Assembly demonstrated strong public support for action in this area:

Establish local Repair hubs to Re-use/re-purpose/upcycle items.	79
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Currently activity is concentrated on maximising reuse of material that has entered municipal waste system (e.g. new reuse shop). There is a lot that could be done prior to waste being thrown away (which could drive further public engagement), including the type of hubs suggested in this recommendation (these could potentially be linked to community hubs and/or town centre development) and engaging with local business about reducing material use/waste as well. Some work has been done in these areas when funding is available, such as the local repair directory, but there is not currently a dedicated plan or resource. It may also be that other organisations are better placed to deliver some of this work.



Nationally the total volume of commercial waste is more than 50% greater than the volume of domestic waste, but the recycling rates are much lower. Potentially Local Authorities could play an important role in this element of this transition as well, and in doing so might also improve the recycling rate for municipal waste overall, but at the moment there are substantial regulatory barriers to this. If national government were to give Local Authorities greater role in business waste, then would have resource implications for the increased collection capacity required.

We have upgraded our commercial waste offer in line with Welsh Government legislation, although due to the COVID pandemic the introduction of this legislation has been extended from October 2021 to March 2024, with limited enforcement initially. Now we are segregating into three waste streams (paper/card; plastic/metal; glass) and since May 2021 operating two new vehicles to collect. At the beginning there was a lot of contamination, as historically there has not been the same drive as with home waste for behaviour change. We have clamped down on side waste and limited bin size, if customers can't fit their waste into existing bins then they are told they need to pay for larger collection. We are looking to expand our customer base and offering.

There are financial implications if the authority does not achieve the statutory recycling target of 70% in 2024/25 it could face financial penalties from Welsh Government of £200 per tonne for every tonne under the target.

Over several decades a model for waste has built up that focuses primarily on the point of disposal, as a result individual members of the public and local government are identified as the main responsible actors, with business producers disappearing from the picture. There is now increasing emphasis on producer responsibility, for example, through Welsh Government initiatives such as the plastic bag charge and potentially encouraging producer responsibility for recycling packaging from their products.

We are seeing an increasing amount of material being diverted into the reuse shop, but the reality is that a lot of bulky items are not in reusable condition and finding ways to divert them from Viridor (waste to energy) to recycling is not easy. There is limited market capacity in the UK, and even for items where providers are becoming available such as mattresses and carpets, the storage of items to keep them in acceptable condition for recycling prior to onward transport is challenging.

Only the initial onward journey of waste is part of our footprint, but it is only one factor in the total carbon impact of waste treatment. We currently prioritise ensuring that wherever possible waste is not taken outside the UK, rather than just the initial journey distance, and full audit trails of the entire process are submitted to Natural Resources Wales. The market is the biggest factor in where and how waste is treated. The Welsh Government is seeking to address the low level of domestic treatment capacity.

Current Status of Transition and Next Steps

W1 Zero Waste. Deliver Waste Management and Recycling Strategy

Currently exceeding targets for recycling rates, with latest Quarter 1 figures looking very positive. The main pressure here is the increasing capacity needed to meet requirements of

more collections due to increased waste streams. Increased use of agency staff has been needed as a result. Resource pressure is likely to increase further with potential recycling of plastic film material from 2027, which is currently being trialled. Replacement of refuse fleet needs to begin in next 2-3 years due to vehicle age and will be a big challenge for the transport transition. It also represents an opportunity for the waste transition to procure fleet that is better suited to future waste streams, which will result in carbon and cost savings from more efficient collections.

W2 *Minimise environmental impact of onward treatment of waste*

Good progress being made, carbon considerations are an important part of procurement, both in terms of minimising export of waste and in requiring all suppliers to provide decarbonisation plan. Will continue to be a focus in future contracts.

W3 *Commercial Waste Service. Develop upgraded service.*

New service has been operating for two years now, performing well, we have enforcement team in place and other local authorities have been contacting us to look at what we have been doing well. Workplace recycling requirements will come into place in April 2024. This may have a significant effect on number of customers although it is difficult to say in which direction this will be, there could be a drop if the private sector comes in with new services at low price in response to this requirement, or we may acquire more customers due to increased demand. There is due to be a national advertising campaign during the summer to raise awareness of these changes and we will be following that with a campaign targeted at our own customers.

The suggestion is that '***develop upgraded service***' as the action under Carbon Impact of Commercial Waste Service has now been completed successfully and that we adopt a new action '***increase customer base and recycling rate***'. In addition to the direct carbon benefit of improved commercial recycling rates, commercial providers refuse vehicles travelling up from Cardiff or similar to service small number of businesses in Blaenau Gwent has a significant carbon impact that our service could reduce. From a financial point of view our commercial service is not subsidised and increasing our customer base will help reach Bridging the Gap profit targets.

We have held meeting with Executive Member for Education and Climate Champion to address school recycling rates. The main issue with reducing the high rates of residual waste being produced by schools is having an engaged facilities manager who has the support of school leadership to ensure that waste is being separated for collection, which is always a challenge for sites such as schools. We have made available data to schools which shows who are good and poor performers in this area.

W4 *Develop stronger 'reduce' element to household waste communication*

First education suite at Roseheyworth opened, to engage school and community groups. A new reuse shop at New Vale currently under development and this will mean we can offer bulky items for the first time. Grant funding is driving our current work in this area as this is

a priority for Welsh Government now recycling is making strong progress in Wales. Staff time for engagement is important to this 'reduce' message also.

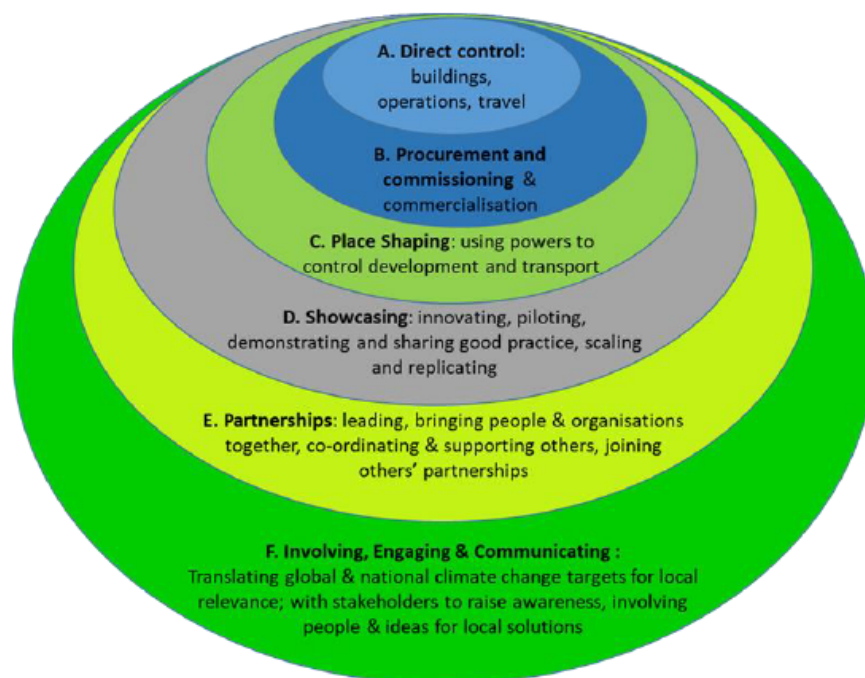
Worked with Ebbw Vale Institute to provide funding and equipment for a first repair café, run by volunteers. At the moment this was a one-off trial, but the aim is to work towards a network or regular repair cafes run across the three valleys. Engaged with partners such as GAVO and Tai Calon on providing support and volunteers for this. Currently work is paused due to staff turnover, but finance is available via Welsh Government for us to facilitate funding applications for community groups. There maybe potential working with Regeneration to engage with business around these circular economy themes as well.

7. Territorial Net Zero 2050

Our Territorial Emissions

Net Zero 2050 relates to production based territorial emissions, these include all the carbon emissions (i) released in Blaenau Gwent and (ii) released to produce energy that is used in Blaenau Gwent. It does not include consumption based territorial emissions, which are the emissions associated with making products that were made elsewhere and consumed in Blaenau Gwent. Consumption based emissions vary much less between local authority areas than production-based emissions, reflecting that there is much more limited scope to influence them at the local level.

We have much less direct control of territorial emissions, actions to reduce these emissions mainly sit in areas C through F of the diagram below, in contrast to actions to reduce organisational emissions, which largely sit in areas A and B. As a result, partnership working and regional and national strategies have a far greater role to play in Net Zero 2050 than in Net Zero 2030 and will also require much more public action. The local authority cannot deliver territorial Net Zero 2050 alone, but we are the organisation that is best positioned to produce a local overview, particularly due to our role in place shaping.



Territorial emissions in Blaenau Gwent have fallen 33% between 2005 and a 2019 baseline, compared to 29% for Wales as a whole. 71% of these reductions in emissions are associated with electricity consumption, while some of these reductions will be due to actions taken locally to improve energy efficiency, a majority will be due to decarbonisation of the National Grid.

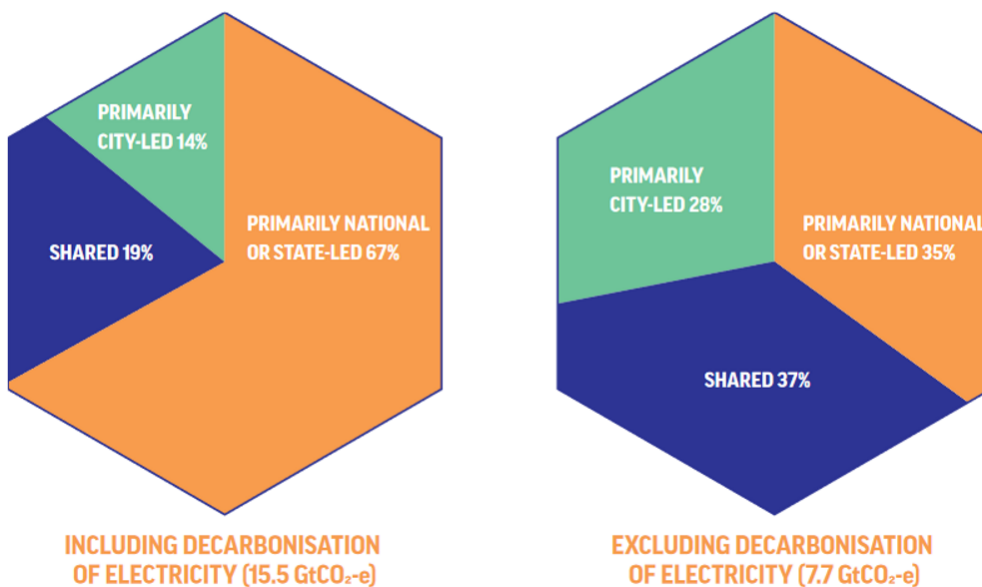
Where do BG emissions come from?



This is reflected in significant falls in both industrial and home carbon emissions, where electricity consumption plays a large role. In contrast reductions in transport emissions have been much smaller.

How much can be done locally?

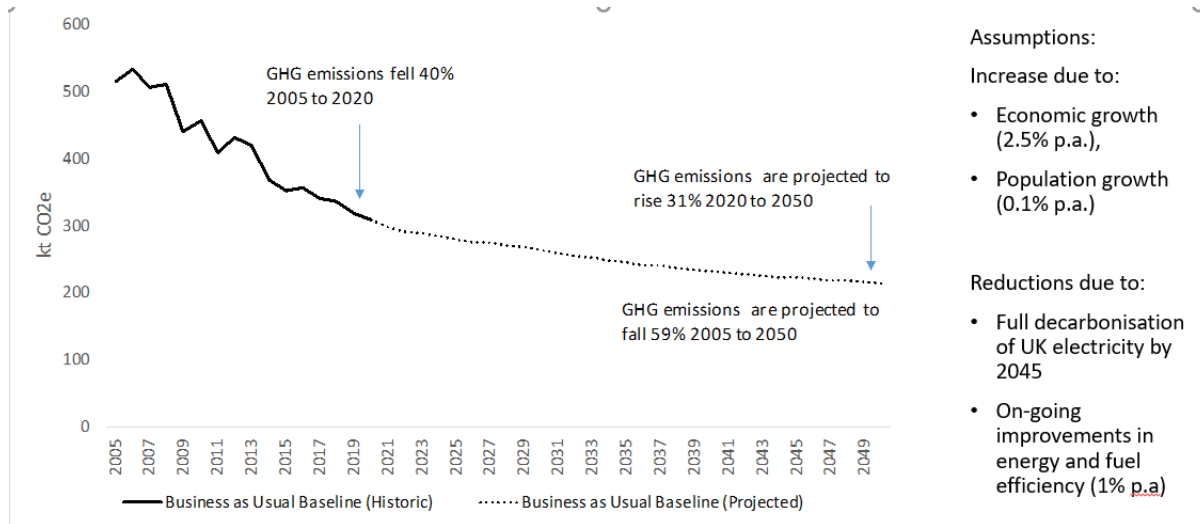
FIGURE 15. PROPORTION OF 2050 URBAN ABATEMENT POTENTIAL OVER WHICH DIFFERENT LEVELS OF GOVERNMENT HAVE PRIMARY AUTHORITY OR INFLUENCE.



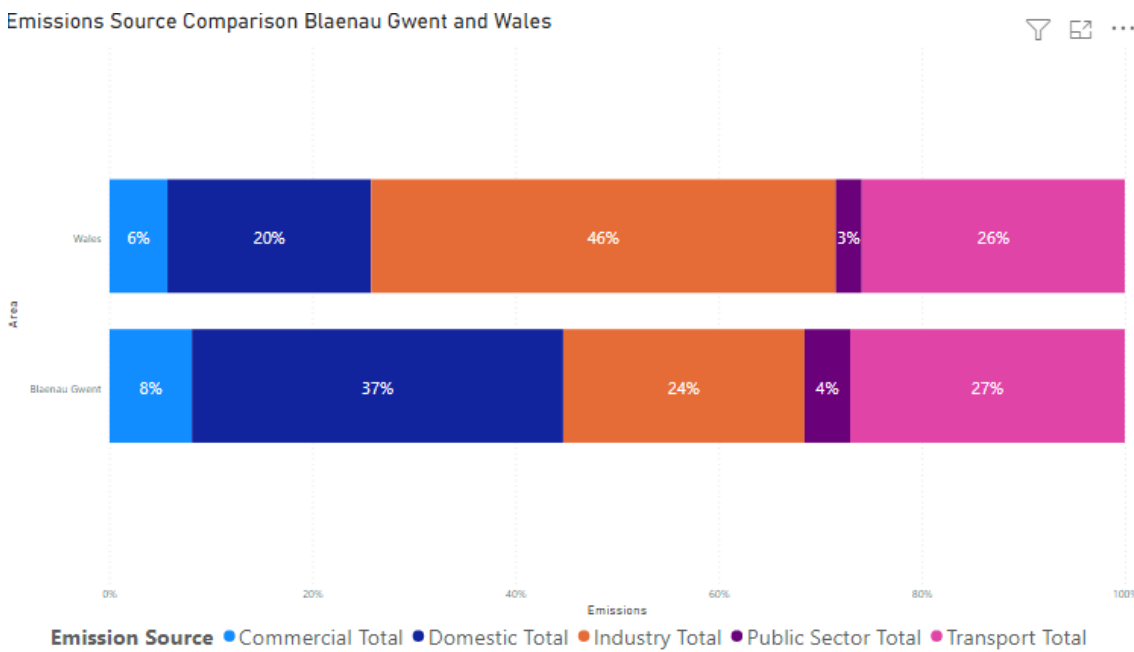
The graphic above estimates the share of territorial emissions that Local Authorities (city-led government) have influence over. The graph on the right excludes decarbonisation of the electricity grid, to show the influence local action has on the other half of non-grid emissions. The UK Climate Change Committee says ‘Progress to date has been largely achieved through centrally driven policy to phase out coal for electricity production. This required a small number of actors supported by local supply chains in specific places. But

many of the urgent changes and decisions which are needed next to reduce emissions and reach Net Zero have a strong local dimension. Decarbonising buildings, transport, waste and industry, cutting emissions from agriculture and storing more carbon through land-use and forestry are dependent on delivery at a local scale.'

Projected Business as Usual Territorial Emissions for Blaenau Gwent

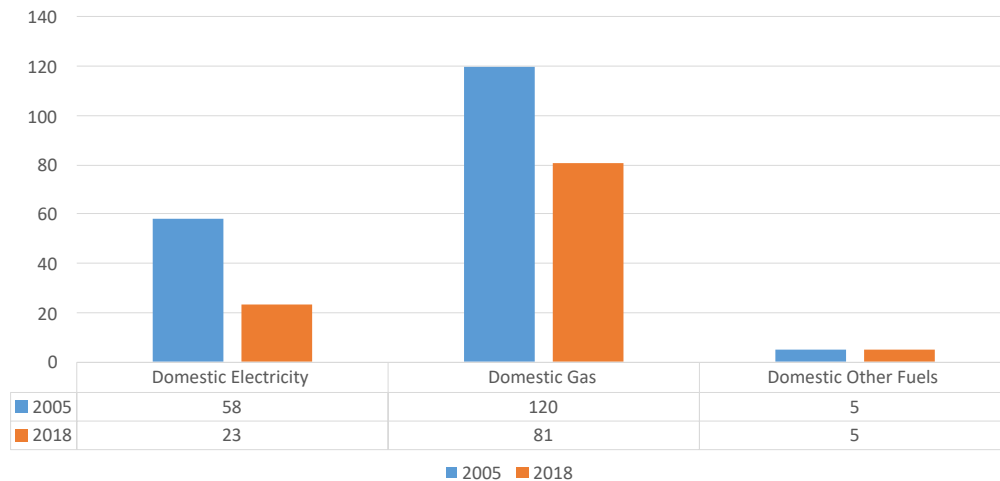


This is reflected in graph of Blaenau Gwent emissions above projecting that full decarbonisation of the National Grid is not enough to reach Net Zero 2050 without local action as well.



Compared to Wales overall a far higher proportion of emissions in Blaenau Gwent come from housing (37% vs 20%), and far less from industry (24% vs 46%), meaning that we likely have more local control over a higher proportion of our emissions.

Where do BG emissions come from?



Over 75% of our remaining emissions from homes are from gas usage, so decarbonising home heating is key to achieving Net Zero for Blaenau Gwent.

Position Summary

There are already a number of actions taking place across the council to cut territorial emissions. However, similar to our position for organisational emissions prior to developing our Decarbonisation Plan, we do not have a clear overview of their total impact or any gaps in relation to Net Zero 2050. The refreshed Climate Group has begun the process of developing a Net Zero 2050 Framework document to address this gap. The framework will be structured around the four themes that emerged from the Blaenau Gwent Climate Assembly in 2021: energy, housing, nature and transport. Officers working in each of these areas have been identified as Climate Leads and will contribute to developing the framework, in addition to their existing work delivering in these areas, including on the five Climate Assembly Recommendations.

The framework is not intended to cover all elements of Net Zero 2050 as comprehensively as the Decarbonisation Plan covered Net Zero 2030, given that (i) the range of emissions sources is far greater and (ii) many of them are much less subject to local control by us (or our partners). Therefore, the intention is that the Net Zero 2050 Framework will sit on top of, and bring together, a number of key plans/strategies which will contain much of the detail of delivery. These documents will largely not be climate specific plans, as the transition to Net Zero 2050 is not separate from achieving our wider well-being objectives under these themes. Many of these will be existing/revised plans, although new plans will be developed to fill gaps (for example the new Local Area Energy Plan, currently under development).

The framework will have two main parts. The first part will provide an overview of the key features of what Net Zero 2050 looks like for Blaenau Gwent in each theme and the key changes needed to reach it. Net Zero 2050 in Blaenau Gwent is not something that we or any other single organisation can deliver on our own, but the framework can provide a long-term overview which we and partner organisations can refer to guide our actions.

The second part of the framework will focus on short/medium term actions under each theme, informed by the long-term goals and areas of greatest local control identified in the first part of the framework. In this part, each theme will be updated on a regular basis (circa 3-5 years) to reflect both changes in the local context and wider technological/policy developments. This will also allow key non-climate plans to be updated with additional detail about our journey to Net Zero 2050 over time, either as replacement plans are developed or as updates to exiting documents.

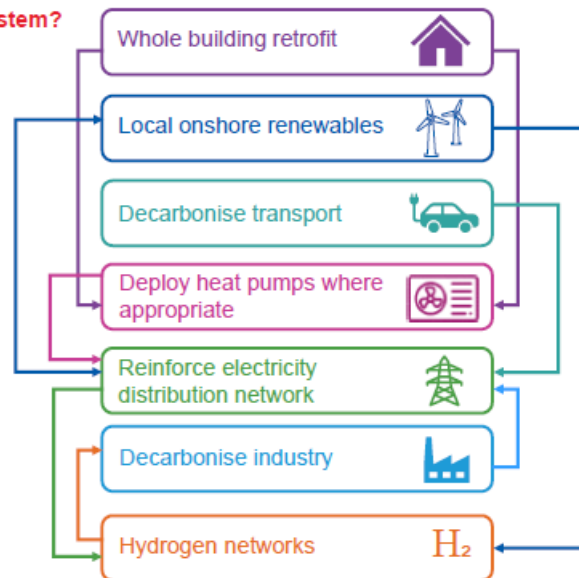
As part of the Net Zero 2050 Framework, we will report annually on Blaenau Gwent's territorial carbon emissions, in a clear and accessible format, as part of this report from next year onwards alongside our organisational footprint. There is already significant data about our territorial emissions available, the main challenge now is to compile this in a single place and understand what it means for us. This includes understanding how our emissions fit in with existing regional and national plans. While ultimately, Net Zero 2050 is not something that can be achieved by us or any other organisation alone, we feel it is important that progress in Blaenau Gwent is reported publicly.

	Transport	Energy	Nature	Housing
Part 1: Net Zero 2050 Overview	For each theme: <ul style="list-style-type: none"> • Clear Description of What Net Zero 2050 means in Blaenau Gwent and the key steps needed to reach it. • Well-being objectives and how shape path to Net Zero 2050. • Identify where we have most local influence/control. • Baseline Data, Carbon Budget and Annual Emissions Reporting. Cross-cutting: <ul style="list-style-type: none"> • Just Transition/fairness for residents • Community Engagement 			
Part 2: Priority Actions	For each theme regularly updated summary of: <ul style="list-style-type: none"> • Current position • Summary/links to key strategies/plans. • Key actions 			

Central to Net Zero 2050 is understanding our future energy system. Our Local Area Energy Plan (LAEP) is currently being developed, with workshops with partners taking place throughout 2023, and will be one of the key documents supporting the Net Zero 2050 Framework. The aim of the LAEP is to assess what are the preferred combination of technological and system changes we can make to the local energy system, to decarbonise heat and local transport and realise opportunities for local renewable energy production.

As such, the LAEP covers the majority of territorial emissions sources in Blaenau Gwent. It will provide a long-term vision for the energy system in Blaenau Gwent, rather than providing a detailed schematic that sets out how each part of the system would be designed and built. The Blaenau Gwent LAEP, along with LAEPs being developed for each Local Authority area, will feed into Cardiff Capital Region and Welsh Energy Plans.

What is your local energy system?



Blaenau Gwent Climate Assembly

In March 2021 44 residents of Blaenau Gwent got together online to discuss the question **'how can we tackle climate change in Blaenau Gwent in a way that is fair and improves living standards for everyone?'** The 44 Assembly Members were chosen at random to be representative of people in Blaenau Gwent (in terms of age, gender, where they live, type of housing etc.) The **Climate Assembly** met for a total of 23 hours online, hearing evidence from over 20 experts (from academics to local residents), and voted on recommendations they created themselves, five of which received the 80% support needed to become official recommendations.

Through the Blaenau Gwent Mitigation Steering Group partners developed a set of proposed actions that we could take in response to the Climate Assembly at the Blaenau Gwent level (recognising that some elements of recommendations will take action at regional or national scale). We agreed to lead for four of these priorities.



8. Climate Adaptation

Net Zero 2030 and Net Zero 2050 are both about **climate mitigation** actions (reducing carbon emissions). The other main form of climate action is **climate adaptation**, which is about taking action to reduce the impact of climate change that is already taking place/will take place in the future.

We can expect by mid-century:

- warmer and wetter winters
- hotter and drier summers
- higher variability of extreme weather
- increased exposure to weather related hazards
- increased frequency and intensity of wildfire.

Climate adaptation will be needed in a number of areas including: the local economy, natural environment, infrastructure and communities. Currently, there is activity being taken by different service areas, but we do not at a corporate level have a clear idea of what the total activity is, any gaps in that activity or what our priorities should be. Over the next 12 months we intend to significantly develop this corporate understanding of adaptation.

As with climate mitigation, adaptation has organisational and territorial elements. Our initial focus will be on organisational climate adaptation, where we have the greatest level of influence on the risks. Our approach to adaptation will be based on working through our existing risk management systems. On the basis that most of the impacts of the climate emergency increase the likeliness and/or severity of existing risks, which are already managed through these systems, rather than creating entirely new risks. This being the case it makes sense to integrate climate adaptation into existing risk management, rather than creating a separate system addressing many of the same risks. Another early priority for this corporate work will be to create a shared understanding of what the likely impacts of climate change are for Blaenau Gwent that can inform a consistent approach across the council.

9. Concluding Remarks

This report sets out the progress we have made so far, including a 6% fall in our direct emissions last year and a cumulative 16% fall over last three years from our 2019/20 baseline. We are determined to continue and accelerate progress towards both Net Zero 2030 and 2050, but the rest of the journey is not going to be an easy one. Ultimately achieving Net Zero will require additional finance and resources beyond our current capacities. We aim to develop our understanding on these resource gaps and positively explore with others how they can be addressed.