



Date: Thursday, 13 January 2022

Time: 10.00 am

Venue: The Auditorium - Theatre Severn, Frankwell Quay, Frankwell,
Shrewsbury. SY3 8FT

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COUNCIL

TO FOLLOW REPORT (S)

10 Carbon Reporting (Pages 1 - 34)

Report of the Executive Director of Place is to follow

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<u>Committee and Date</u>
Cabinet 19 January 2022

<u>Item</u>
<u>Public</u>

CORPORATE CARBON PERFORMANCE MONITORING REPORT 2021

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1. Synopsis

- 1.1. The Council adopted a Climate Strategy and Action Plan in December 2020 and committed to reporting annually on corporate carbon performance and the projects and initiatives designed to reduce its carbon footprint. This report summarises the latest information about these issues.

2. Executive Summary

- 2.1. Shropshire Council declared a climate emergency in May 2019 and in December 2020 adopted a Climate Strategy and Action Plan, which establishes the objective of achieving net-zero carbon performance for Shropshire Council by 2030 and aims for an annual carbon reduction of 10% per year. The Climate Change Task Force was established to lead the Council's response in November 2019, supported by an internal officer working group.
- 2.2. During 2021, the efforts of the Task Force have been directed towards embedding climate change as a key consideration in the Council's corporate governance systems. A range of projects and initiatives have also been developed to help the Council improve its own performance and to help foster similar action across the wider economy and communities in Shropshire (see Section 8 below).
- 2.3. Accurate data and monitoring and reporting systems for carbon performance are still being developed, but the best available data suggests that:
 - i. Shropshire Council's direct carbon emissions (Scopes 1 & 2) have fallen significantly from around 5,000 tonnes CO₂e in the financial year (FY) 2020 to around 1,900 tonnes in FY 2021, due primarily to the adoption of a 100% renewable power supply through West Mercia Energy and the effect of the pandemic on service delivery.

- ii. The Council’s indirect emissions (Scope 3) for 2020 have been reassessed in light of more accurate data as around 30,000 tonnes CO₂e (previously reported as around 50,000 tonnes). In FY 2021, the Council’s indirect emissions have increased slightly to 32,204 tonnes CO₂e. (see table below).
 - iii. Overall Gross carbon emissions have fallen by around 3% from 35,000 tonnes to around 34,000 tonnes.
 - iv. High levels of municipal waste recycling and the management of Council-owned land generate carbon savings which help to offset our gross carbon emissions and this activity has improved by 1,200 tonnes from around minus 34,000 tonnes CO₂e in 2019 to around minus 37,000 tonnes CO₂e in 2020.
 - v. Net carbon emissions have therefore fallen from 1,665 tonnes to a net-negative performance of -4,296 tonnes.
- 2.4. The significant reduction in direct emissions is welcome, but the slight increase in indirect emissions has limited the overall reduction in gross emissions to only 3% against a target of 10%. Whilst this is disappointing, it reflects the impact of increased spending on commissioned services across several service areas where carbon emissions are still being estimated using spend, rather than actual measurement. It is worth noting that Shropshire Council is currently one of only a few Councils to report the full extent of its carbon emissions, including indirect emissions.
- 2.5. Whilst the carbon savings generated from recycling and land management activities means that the Council’s footprint is technically already net-zero, it is important that the Council continues to focus on reducing its gross emissions.
- 2.6. The Council’s corporate footprint represents only around 1% of Shropshire’s total carbon footprint, but the Council is able to influence as much as 33% of emissions through its regulatory and support functions. The Council is already supporting a wide range of projects and initiatives designed to support local businesses and communities to reduce their carbon emissions. These are outlined in more detail in the report below.

3. Recommendations

- 3.1. That Cabinet approves the Corporate Carbon Performance Monitoring report 2021 (Appendix 1) for publication;

REPORT

4. Risk Assessment and Opportunities Appraisal

- 4.1. The climate crisis is a serious threat to the lives of millions of people both globally, nationally and locally. The mitigation of greenhouse gas emissions and adaptation measures to build resilience is now urgent and essential to prevent the worst outcomes. Even if we are successful in mitigating the worst effects, we will continue to experience more pronounced and frequent episodes of extreme weather effects. The much greater frequency of extreme weather events will significantly increase insurance risks and threaten the health, wellbeing and future resilience of our communities.
- 4.2. The climate crisis therefore represents a significant strategic risk to Shropshire and the delivery of Council and public services. This risk is most likely to manifest itself in terms of financial impacts (e.g. operating costs, impacts on the Shropshire economy) and impacts on the health and well-being of staff and residents as service users.
- 4.3. Taking active steps through the implementation of a corporate Climate Strategy and Action Plan and supporting wider community efforts allows the Council to make a demonstrable contribution to reducing the carbon footprint of the wider county, as well as 'leading by example' by reducing its own carbon footprint. Through its regulatory role and procurement decisions, Shropshire Council is in a position to make a strong positive contribution to help the wider Shropshire community make a positive transition to a low carbon future.
- 4.4. An Equality and Social Inclusion Impact Assessment (ESIIA) was previously completed in support of the adoption of the corporate Climate Strategy and Action Plan. The assessment indicated that the Strategy which is the subject of this monitoring report is likely to have a positive effect on all groups in society. The climate emergency will have significant impacts on the whole of Shropshire and all its diverse communities, from those living or working in our rural areas to those living or working in our market towns, as well as those that travel into our county and across our porous borders.
- 4.5. Individual Council services will progressively need to engage with their staff and service users to explore the need for, and implications of, service changes which may result from the adoption of carbon reduction measures. The Council will need to adopt an agile approach keep abreast of national good practice in order to maximise opportunities for equality and social inclusion within the overall policy context of addressing the climate emergency

5. Financial Implications

- 5.1. Measures to reduce Shropshire Council's carbon footprint and adapt service delivery to address the impacts of extreme weather events will significantly reduce future financial risk and may potentially generate revenue savings as well as delivering on our corporate responsibilities to the environment and our communities. Improving Shropshire Council's carbon performance and resilience will however

require significant capital investment in energy efficiency, low carbon technologies and renewable energy generation.

- 5.2. An annual revenue budget has been established to provide for staff resources in the Climate Change team and to support bids for Government grant funding and work to develop and implement the wide range of projects associated with the key themes of the Council's adopted Climate Strategy as illustrated in Table 3 below. From 2022/23, it is proposed that £0.500m budget per annum will be provided for this work.
- 5.3. Access to the Council's Capital Programme will be pursued where projects will be appraised on an individual basis following the process detailed in the Capital Strategy. Each initiative in the climate strategy would need to be evaluated on its own merits prior to inclusion in the Capital Programme. Some projects delivered in partnership with others may lead to commercial income being generated.
- 5.4. However, failing to reduce the Council's carbon footprint and implement climate change adaptation measures represents a significant financial threat to both revenue costs and the value of the Council's capital assets. This means that there is an incentive for the Council to 'Invest to Save' to mitigate the risk of future costs.
- 5.5. Many measures to reduce dependence on greenhouse gasses also offer opportunities to both generate a financial return and to provide community leadership which highlights the 'clean growth' economic potential of new technologies and adaptation measures in the Shropshire context.

6. Climate Change Appraisal

- 6.1. *Energy and fuel consumption:* A range of projects and initiatives have contributed positively to the reduction of carbon emissions reported in this document by facilitating improved energy efficiency and carbon performance across Council Services;
- 6.2. *Renewable energy generation:* A number of projects in the Climate Action Plan are being developed to drive the delivery of additional generation of renewable energy from a range of technologies on Council land and buildings;
- 6.3. *Carbon offsetting or mitigation:* The management of Council land and our commissioned waste management service have made a key contribution to the reduction of carbon emissions reported in this document. A range of additional projects and initiatives are being developed to drive the capture and storage of carbon and to mitigate the effects of climate change on biodiversity;
- 6.4. *Climate Change adaptation:* The Climate Task Force is working with colleagues across the Council to ensure that the risk which extreme weather associated with climate change presents to Council services

is better recognised and to ensure that our assets and services are resilient in the face of the challenges of more extreme weather events.

7. Background

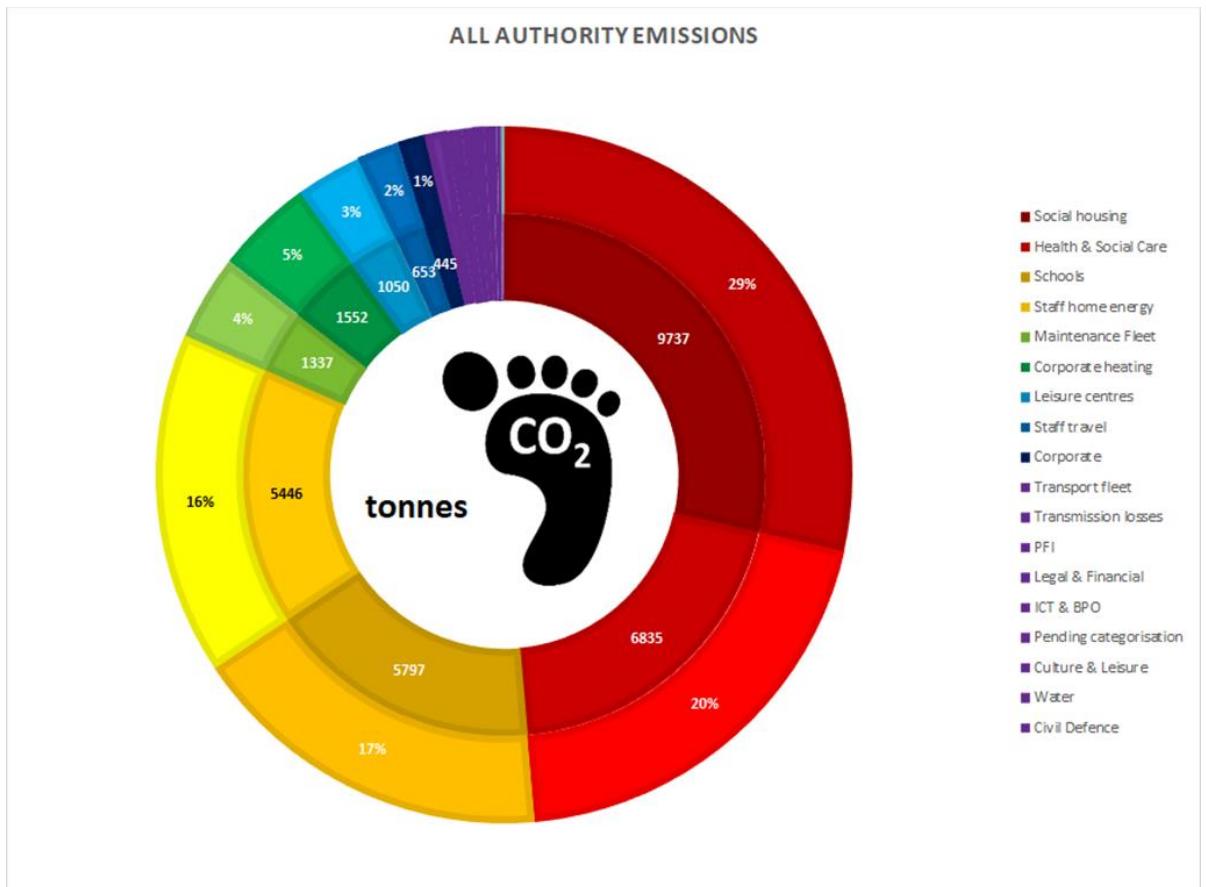
Shropshire Council’s Current Carbon Footprint

7.1. The gross emissions for Shropshire Council’s operations are 34,098 tCO₂e. Our direct emissions have reduced significantly following a move to an all renewable power supply, but this serves to highlight the fact that heating buildings with fossil fuels has a high footprint (1.6kt). Collectively transport (our fleet and staff’s own vehicles) account for 1.4kt. Outsourced and additional Scope 3 emissions make up the majority of our current carbon footprint and are outlined in additional detail below.

Table 1: Shropshire Council Carbon Emission 2020-21

Scope	Emissions Type	Emissions (tCO ₂ e)	Percentage of gross
Scope 1	Corporate heating	1,552	5%
	Transport fleet	343	1%
Scope 2	Electricity	0	0%
Scope 3	Social housing	9,737	29%
	Health & social care	6,835	20%
	Schools	5,797	17%
	Staff home energy	5,446	16%
	Maintenance fleet	1,337	4%
	Leisure centres	1,050	3%
	Staff travel	653	2%
	Corporate	445	1%
	Transmission losses	242	1%
	PFI	179	1%
	Legal & financial	164	0%
	ICT & BPO	124	0%
	Pending categorisation	80	0%
	Culture & arts	65	0%
Water	38	0%	
Civil Defence	12	0%	
Gross emissions		34,098	100%

Figure 1: Corporate Carbon Emissions (Scopes 1 & 2)



Annual Change in performance 2019-20 to 2020-21

7.2 Last year’s corporate carbon footprint has been updated using the same methodology as this year to allow a direct comparison between the two:

Table 2: Change from Financial year 2020 to 2021

Scope	FY2020 (tCO2e)	FY2021 (tCO2e)	Difference (up or down)	% change
Scope 1	2,309	1,894	-415	-18%
Scope 2	2,643	0	-2,643	-100%
Scope 3	30,317	32,204	+1,887	+6%
Gross	35,269	34,098	1,171	-3%

Scope	FY2020 (tCO2e)	FY2021 (tCO2e)	Difference (up or down)	% change
Negative emissions	-33,605	-36,729	-3,125	-9%

Figure 2: Change in Shropshire Council Carbon Footprint 2019-20 to 2020-21



- 7.2. Scope 2 emissions have reduced to zero due to the adoption of a zero-carbon electricity tariff and we have made efficiency savings on several buildings as part of our ongoing Carbon Reduction Programme for buildings.
- 7.3. Unfortunately, an increase of outsourced scope 3 emissions has undermined this progress. However, an improved reporting method is expected to improve the accuracy of the carbon reporting for commissioned services and will provide a more consistent framework to help service areas to improve their performance in future. The Climate Team is working closely with procurement and ICT to develop and implement improved reporting.
- 7.4. Carbon offsetting and capture activities have increased by 12%, reflecting high levels of domestic waste recycling under the contract operated by Veolia and the capture and storage of carbon on Council owned and managed land.




Commissioned Services

- 7.5. The pandemic has had an impact on the delivery of council services, including outsourced services last year. Overall, schools maintained by the council had the highest emissions with 5.8 ktCO2e, then leisure centres account for 1 ktCO2e (compared with 3 ktCO2e during a non-covid year). The Highways footprint of 0.95 ktCO2e

reflects the intensity of use of maintenance vehicles and gritters during the winter period.

8. Climate Action Plan: Themes and Example Projects

8.1. Shropshire Council’s adopted Climate Change Strategy and Action Plan has three key themes, sub-divided into sub-themes:

	<p>1. Power Down (Carbon Footprint Reduction)</p> <ul style="list-style-type: none"> i. Low Carbon Transport ii. Buildings - Energy Efficiency improvements iii. Corporate governance iv. Supporting the transition to a low carbon economy
	<p>2. Power Up (Renewable Energy Generation and Storage)</p> <ul style="list-style-type: none"> i. Renewable Power ii. Low Carbon Heat
	<p>3. Biodiversity, Carbon Capture and Storage</p> <ul style="list-style-type: none"> i. Tree Planting ii. Land Management

8.2. A wide range of actions, projects and initiatives have been completed, are currently in progress or are planned for future years and these are summarised in Appendix 1. Some of these projects and initiatives are designed to improve Shropshire Council’s corporate carbon performance, whilst others are designed to help Shropshire businesses and communities make the transition to a low carbon approach. Table 3 below provides some examples for each sub-theme:

Table 3: Example Carbon & Climate Projects (see Appendix 1 for full list)

Example Projects	Budget	Carbon Saving	Corporate /County-wide focus	Latest position
Power Down: Low Carbon Transport:				
EV Charging infrastructure	£2m	TBC	County-wide	<ul style="list-style-type: none"> • Current installation of 50 chargers and another 180 chargers planned by March 2022 • Detailed travel analysis commissioned to support further installations

Power Down: Buildings - Energy Efficiency improvements				
Retrofit of SC building assets	£1m	108t CO2e/yr	Corporate	<ul style="list-style-type: none"> Energy efficient lighting and heating and renewable energy improvements to 5 buildings Work to prepare to identify and prioritise further improvements to around 90 Shropshire Council buildings
Power Down: Corporate governance				
Staff and member Carbon Literacy training	TBC	n/a	Corporate	<ul style="list-style-type: none"> Carbon Literacy Trust accredited training for Cabinet and Executive Directors completed. Roll out to other staff planned during 2022
Power Down: Supporting the transition to a low carbon economy				
Business carbon advice service	£11k	TBC	County-wide	<ul style="list-style-type: none"> Grant support to Shropshire Climate Action to fund a free service to help 300 to 500 Shropshire businesses to improve their Carbon Footprint
Power Up: Renewable Power				
Shrewsbury Weir Hydro	£3.5m	TBC	Corporate	<ul style="list-style-type: none"> SC is working with STC and local investors to refresh the scheme previously agreed in 2015. The hydro system would deliver 0.4MW of renewable power
Power Up: Low Carbon Heat				
North Shrewsbury Heat network	£75k	TBC	Both	<ul style="list-style-type: none"> Government funding for a detailed feasibility study into piping waste heat from the Battlefield ERF to heat businesses or public buildings.

Biodiversity, Carbon Capture and storage: Tree Planting				
Community Tree Scheme	£32k	TBC	County-wide	<ul style="list-style-type: none"> Since 2010 around 96,000 individual trees have been planted and 70,000 trees for hedges have been planted.
Biodiversity, Carbon Capture and storage: Land Management				
Carbon Credits	TBC	TBC	Both	<ul style="list-style-type: none"> Assessment of Council owned land for potential carbon credits. Development of a mapping tool to help private landowners.

Key: Completed; In Progress; Planned

9. Conclusions

- 9.1. The significant reduction in direct carbon emissions and modest overall reduction in gross emissions is welcome, our overall corporate performance was undermined by the increase in indirect emissions. Whilst this is disappointing, it reflects the impact of increased spending on commissioned services across several service areas where carbon emissions are still being estimated using spend, rather than actual measurement.
- 9.2. Whilst the carbon savings generated from recycling and land management activities means that the Council's footprint is technically already net-positive, it is important that the Council continues to focus on reducing its gross carbon emissions.
- 9.3. The Council's corporate footprint represents only around 1% of Shropshire's total carbon footprint, but the Council is able to influence as much as 33% of emissions through its regulatory and support functions. The Council is already supporting a wide range of projects and initiatives designed to support local businesses and communities to reduce their carbon emissions.

List of Background Papers (This MUST be completed for all reports, but does not include items containing exempt or confidential information)

Council 17th December 2020: Draft Climate Strategy and Action Plan:
<http://shropshire.gov.uk/committee-services/ieListDocuments.aspx?CIId=125&MIId=4137&Ver=4>

Cabinet Member (Portfolio Holder)

Ian Nellins, Portfolio Holder for Climate Change, Natural Assets & the Green Economy

Local Member

All

Appendices

Appendix 1: Climate Strategy 2021 Progress Report

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Shropshire Council

Climate Strategy

Corporate Carbon Monitoring Report 2020-21

In Partnership with:



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1. Introduction

- 1.1 This progress report updates the councils carbon footprint highlighting any changes from the baseline year (2020). The report seeks to address the following questions:-
1. What is the latest corporate carbon footprint?
 2. How has this changed from that reported in 2020?
 3. What have the projects and initiatives which we've supported contributed to the change?
 4. What other factors have had an influence?
 5. Are we 'on track' as a trajectory towards our corporate target for 2030?
 6. What co-benefits are there, such as revenue cost savings, public health, air quality and biodiversity
 7. What has Shropshire Council contributed to wider activity to decarbonise Shropshire?
 8. What additional activities such as training, support for community climate action, changes to procurement, are planned.
- 1.2 As well as reporting carbon performance, the report provides a summary of live and proposed projects necessary to tackle the "carbon gap". Crucially that follows an evidence led approach is taken to target the areas identified with the biggest carbon footprint.
- 1.3 Our adopted Climate Strategy aims for an annual reduction of 10% per year. With UK commitments made in COP26, decarbonisation needs to be continuous and progressive towards our net zero goal of zero carbon by 2030.

2. Carbon reporting method

- 2.1 Shropshire Council is reporting its performance for the financial year 2020/21 using the national LGA [Greenhouse Gas Accounting Tool](#). Performance monitoring will be refined as more data becomes available. The [Greenhouse Gas Accounting Tool](#) and its [FAQs](#) define the scopes:-

Table 1 – Carbon Emission Scopes as defined in LGA Carbon Accounting Tool (FY 2020/21)

Emissions Scope	Category	Detail
Scope 1	Corporate Landlord Buildings (kWh gas and oil)	Corporate administrative and public buildings,
	Passenger transport fleet	(L's diesel, petrol)
Scope 2	Corporate Landlord Buildings and streetlighting (electric)	Factors green tariff and conversion to LEDs, and traffic controls.
Scope 3	Veolia commercial recycling	"Resources" recycling, reuse, and water for the delivery of services (but not domestic - below).
	Warp It re-use platform	
	Water supply and treatment	
	Veolia domestic recycling	Municipal waste contract

Emissions Scope	Category	Detail
(Uncategorised LGA model)	Staff travel	Staff travel: Enterprise cars, commute.
	Leisure services* PFI buildings * Schools (maintained only) Highway's vehicles contracts	Leisure centre operators * Private Finance Initiative * Highways: Kier, WSP
	Service Providers* Social housing * Staff carbon footprint: Staff home energy*	Contracts and suppliers spend STAR housing * Shropshire domestic (average)

*New or significantly revised dataset for 2021.

3. 2020/21 Corporate Carbon Footprint

3.1 Last year's footprint has been updated using the same methodology as this year to make a direct comparison between the two:

Table 2: Change from baseline year: 2020

Scope	FY2020 (tCO2e)	FY2021 (tCO2e)	Difference (up or down)	% change
Scope 1	2,309	1,894	-415	-18%
Scope 2	2,643	0	-2,643	-100%
Scope 3	30,317	32,204	+1,887	+6%
Gross	35,269	34,098	1,171	-3%
Negative emissions	-33,605	-36,729	-3,125	-9%
Net total	1,665	-2,631	-4,296	-258%

Annual Change in performance 2019-20 to 2020-21

3.2 The net decrease is due to a favourable negative emission set and the following:

- Scope 1: (18% decrease). Reduced service delivery due to the pandemic likely a factor in reduced buildings and vehicle usage for delivering services. In addition, our ongoing carbon reduction programmes are to be credited for some savings.
- Scope 2: (100% reduction). The WME green tariff has contributed to the zero-carbon electricity, this is REGO accredited.
- Scope 3: (6% increase):
 - Highways increased use of gritters due to the winter weather.
 - Increased spend across several service areas (estimate based on spend).

- Increased staff carbon footprint from working from home shown below:

Staff carbon footprint	FY2019/21	FY2020/21
<i>Staff business travel</i>	980	485
<i>Staff commute</i>	2,847	167
<i>Staff home energy</i>	869	5,446
TOTAL	4,697	6,099

Figure 1 Authority emissions (2-year comparison)



3.3 Scope 2 emissions have reduced to zero due to the adoption of a zero-carbon electricity tariff and we have made efficiency savings on several buildings as part of our ongoing Carbon Reduction Programme for buildings.

3.4 Unfortunately, an increase of outsourced scope 3 emissions has undermined this progress. However, an improved reporting method is expected to improve the accuracy of the carbon reporting for commissioned services and will provide a more consistent framework to help service areas to improve their performance in future.

The Climate Team is working closely with procurement and ICT to develop and implement improved reporting.

- 3.5 Carbon offsetting and capture activities have increased by 12%, reflecting high levels of domestic waste recycling under the contract operated by Veolia and the capture and storage of carbon on Council owned and managed land.

Commissioned Services

- 3.6 The pandemic has had an impact on the delivery of council services, including outsourced services last year. Overall, schools maintained by the council had the highest emissions with 5.8 ktCO₂e, then leisure centres account for 1 ktCO₂e (compared with 3 ktCO₂e during a non-covid year). The Highways footprint of 0.95 ktCO₂e reflects the intensity of use of maintenance vehicles and gritters during the winter period.

Are we 'on track' towards our corporate target for 2030?

- 3.7 Whilst the carbon savings generated from recycling and land management activities means that the Council's footprint is technically already net-positive, it is important that the Council continues to focus on reducing its gross carbon emissions which have only reduced by 3% rather than the annual trajectory target of 10% in our adopted Climate Strategy.
- 3.8 Existing efforts to decarbonise our power supply and to retrofit our buildings to generate energy efficiency savings have contributed to significant reductions in our direct emissions as part of our ongoing Carbon Reduction Programme.
- 3.9 However, an increase of scope 3 emissions has undermined overall progress, although an improved reporting method and training for those commissioning external services is expected to improve the accuracy of carbon reporting and help facilitate a mechanism for service areas going forwards.

4. Corporate Carbon Footprint – in more detail

- 4.1 The gross emissions for authority operations are 34ktCO₂e. Scope 1 (direct emissions) comprise of heating public and administrative buildings (1.5ktCO₂) and transport fleet (343tCO₂). Collectively transport accounts for 2.3kt so it is important to decarbonise this sector. Scope 3 makes up most of the emissions; ranked highest to lowest below. Social housing, health and social care, schools then staff's home energy use (whilst working) are the councils' highest sources of GHG emissions.

Table 3: Corporate Carbon Emissions by Scope

Scope	Emissions Type	Emissions (tCO ₂ e)	Percentage of gross
Scope 1	Corporate heating	1,552	5%
	Transport fleet	343	1%
Scope 2	Electricity	0	0%
Scope 3	Social housing	9,737	29%

Scope	Emissions Type	Emissions (tCO2e)	Percentage of gross
	Health & social care	6,835	20%
	Schools	5,797	17%
	Staff home energy	5,446	16%
	Maintenance fleet	1,337	4%
	Leisure centres	1,050	3%
	Staff travel	653	2%
	Corporate	445	1%
	Transmission losses	242	1%
	PFI	179	1%
	Legal & financial	164	0%
	ICT & BPO	124	0%
	Pending categorisation	80	0%
	Culture & arts	65	0%
	Water	38	0%
	Civil Defence	12	0%
Gross emissions		34,098	100%

Figure 2: Direct Corporate Carbon Emissions

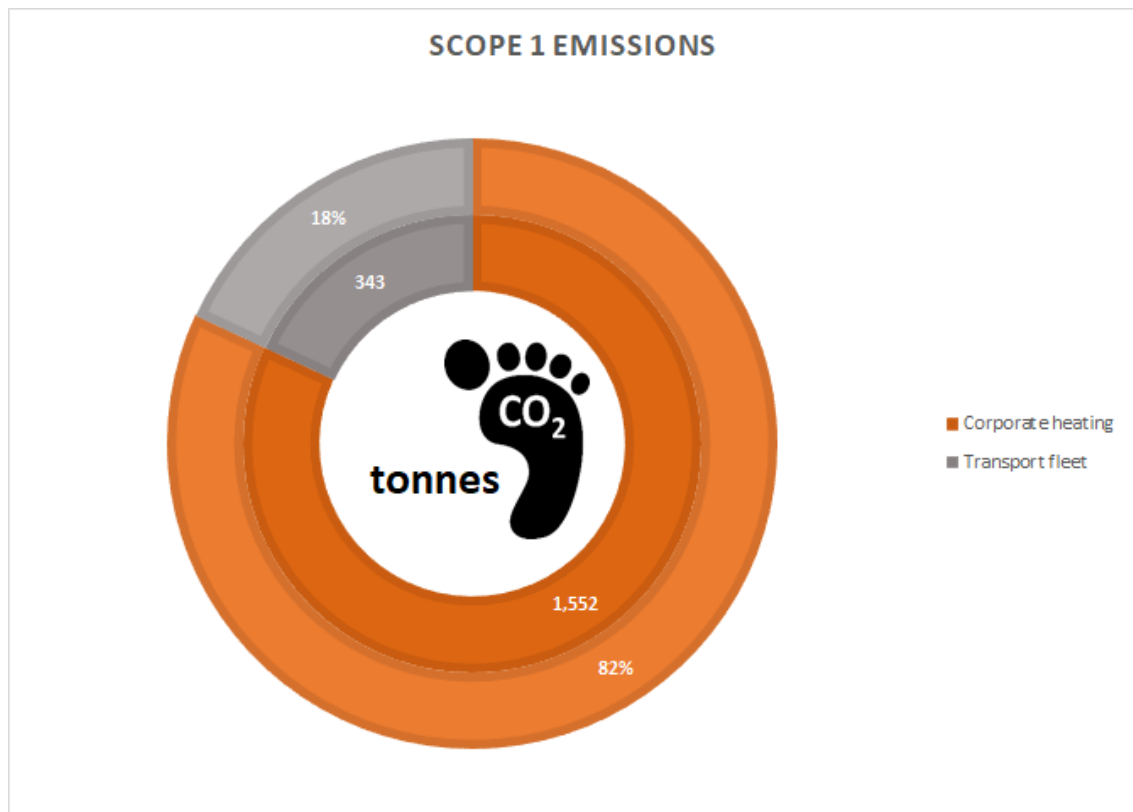


Figure 3: Indirect Corporate Carbon Emissions

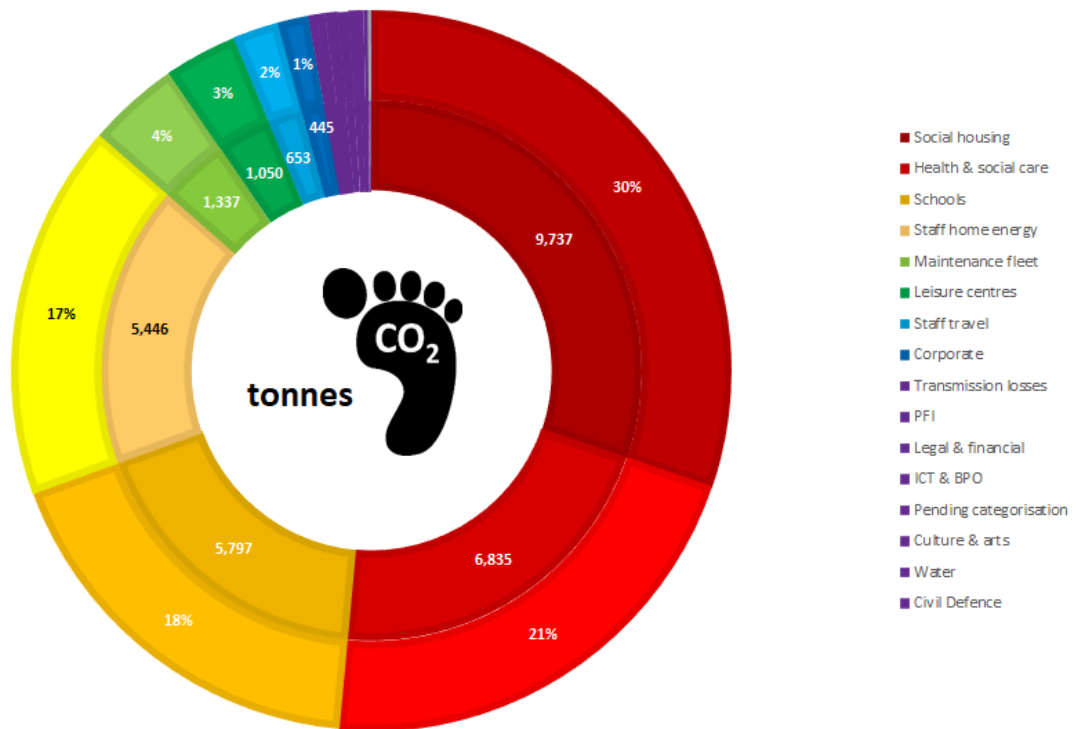
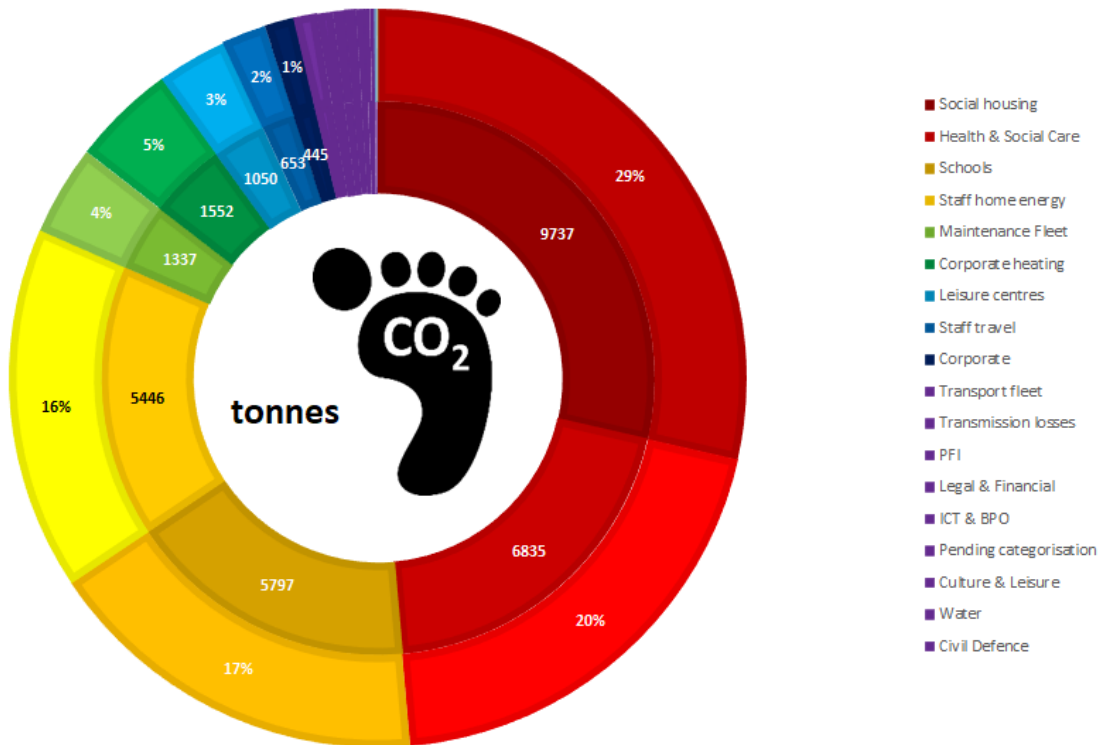


Figure 4: All Corporate Carbon Emissions



Negative emissions (carbon insetting)

Land use

- 4.2 The methodology for calculating how much carbon is released, or captured and stored through the management of land is set out in: [Mapping Carbon Emissions & Removals for the Land Use, Land-Use Change & Forestry Sector](#). The latest dataset available is from [2019](#). For the whole of Shropshire (3,197.3km²) the summary position is as follows:

Table 4 – Carbon Emissions from land uses in Shropshire

Net Emissions (2019):	Emissions (t CO₂/yr.)
Forest land	-156,300
Cropland	151,600
Grassland	-83,900
Wetlands	1,200
Settlements	64,800
TOTAL	-22,600

- 4.3 For council managed land and projects, an estimated -6,520 tCO₂e is sequestered per year by natural carbon sinks. This is across an estimated 2,500m² as follows:

Table 5 – Carbon Emissions from Shropshire Council Land

Land usage / site category	Area (km²)	tCO₂e/yr.	Notes / reference
Countryside sites	478.67	-2302	
Other freehold	1809.68	-3179	Approximate figures as habitats for all our land holdings aren't known.
Leasehold	205.87	-355	
Free Tree Scheme	Varied (unknown)	-93	Not including hedgerow plantings. Includes trees planted since 2010
Trees outside woodland	Varied (unknown)	0	No trees planted for the period
TOTAL	2494m² (+ unknown)	-6,520	

- 4.4 We know that Shropshire has around 15% tree cover. Around 9% is estimated as younger woodland and the remaining 6% as 100 years old or more. The remainder is assumed to be primarily either built up or permanent grassland and therefore have negligible emissions or sequestration. Only large sites that aren't Countryside Sites like the Old Riverbeds have been calculated separately. Change in carbon storage for hedgerows or individual trees hasn't been calculated and all figures are approximations for habitat areas on our land holdings. Wide variation

exists even for those habitats that are known; For example, different tree types store carbon quicker than other types and other factors like soil type and land management also have a significant impact. There is no accurately recorded data prior to 2019 on carbon sequestration for council owned land.

Circular Economy

- 4.5 As well as carbon which is captured and stored through land-use, waste management services and projects also generate carbon savings, largely through recycling materials which offset the carbon impact of manufacturing goods from newly extracted materials.

Table 6 – Carbon Savings from Sustainable Waste Management

Recycling and reuse	tCO2e/yr	Reference
Veolia domestic recycling	-30,184	A WRATE assessment of the Veolia Contract with Shropshire Council: 2021
Veolia commercial recycling contract	-1.1	Shropshire Council Commercial Movement Analysis Report 2020 - 2021
Warp It (reuse)	-24	Shropshire Council performance metrics https://www.warp-it.co.uk/company/shropshirecouncil

Negative Emissions Summary

Table 7 – Shropshire Council Carbon Reduction

<i>Negative emission set 2020/21</i>	<i>tCO2</i>	<i>Percent</i>
Material reuse	-24	0.1%
Commercial waste contract	-1	0%
Domestic waste contract	-30,184	82%
Natural carbon sinks	-6,520	18%
Negative emissions total	-36,729	100%

Shared resources

- 4.6 Carbon budgeting and setting targets between service areas needs to fairly represent the impact of both controllable and fixed activities associated service delivery. Whilst the wider impacts of service delivery by the council (i.e., the county emissions may not be the direct responsibility of the council it is fair to say the council is the significant stakeholder in terms of influence due to the public services it delivers. This footprint is distributed across the service areas, given that further refinement may be necessary.
- 4.7 The shared carbon footprint associated with council service delivery is as follows:

Table 8 Carbon Impact of Shared Council Services

Category	tCO ₂ e/yr.
Staff home energy	5,446
Office use	1,418
Corporate	445
ICT & BPO	124
Pending Categorisation	80
TOTAL	7,484

Service Area Carbon Performance

- 4.8 Whilst Shropshire Council's corporate emissions represent less than 1% of the total for Shropshire, council services can contribute significantly to the objective of decarbonising county-wide emissions from domestic property, industry & commerce and transport.
- 4.9 Some service areas can have an impact on the whole county. Table 9 below shows the corporate carbon footprint associated with delivery individual services, together with Government data for the emissions which that service could influence and the target annual reduction (based on 10% saving per year) for the emissions in each category. They are ranked highest to lowest emissions for each sector.

Table 9 Carbon Impact by Council Service Area

Service area responsibility	Council (ktCO ₂)	County sector (ktCO ₂)	Countywide target reduction/yr.
Transport & highways	2	730	73
Place - Economic growth	1	511	51
Social care & housing	25	493	49
Resource's governance & assurance	2	172*	17
Culture & leisure	5	n/a	1
Public health/Outdoor Partnerships **	1	-23	-2

*The 172ktCO₂e is relates to the Shropshire Council pension fund.

**It is understood that public health has some responsibility for land use and therefore will impact on countywide negative emission sets. This would also apply to the AONB, countryside and outdoor partnerships teams.

- 4.10 The monitoring process for these emissions is likely to evolve and will need further refinement in future years to fairly identify the influence of each service area.

*Public buildings***Table 10 Carbon Performance of Public Buildings**

FY2019/20	£M/yr.	tCO ₂ /yr.
Public and administrative	£1.46	3,214
Leisure	£0.94	3,201
Schools (maintained)	£2.03	5,992

TOTAL	£4.43	12,407
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Figure 5 – Carbon Emissions from Public Buildings

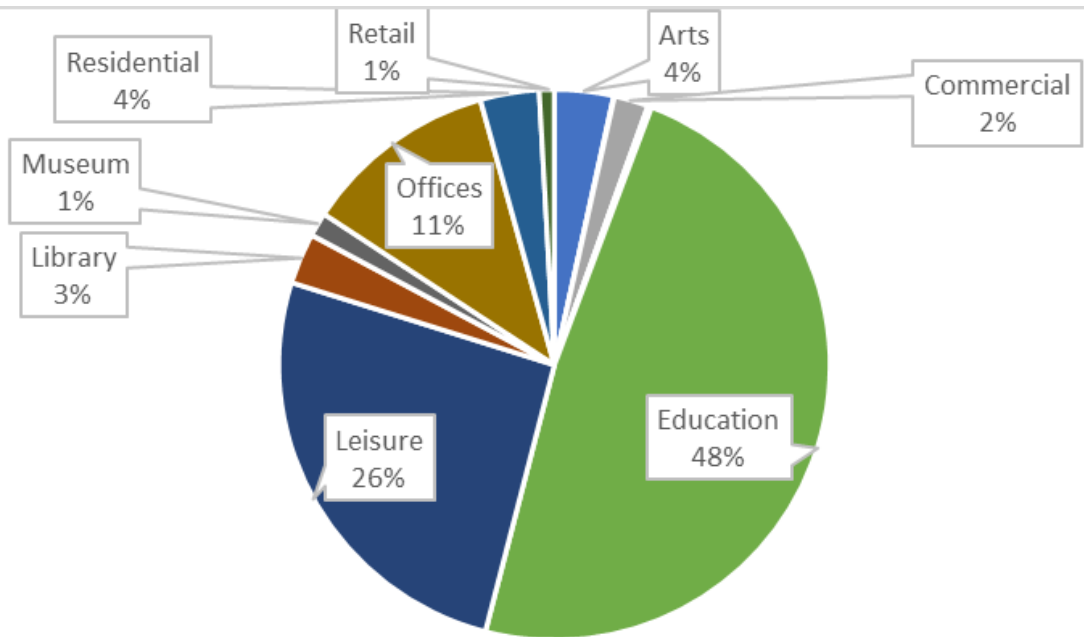
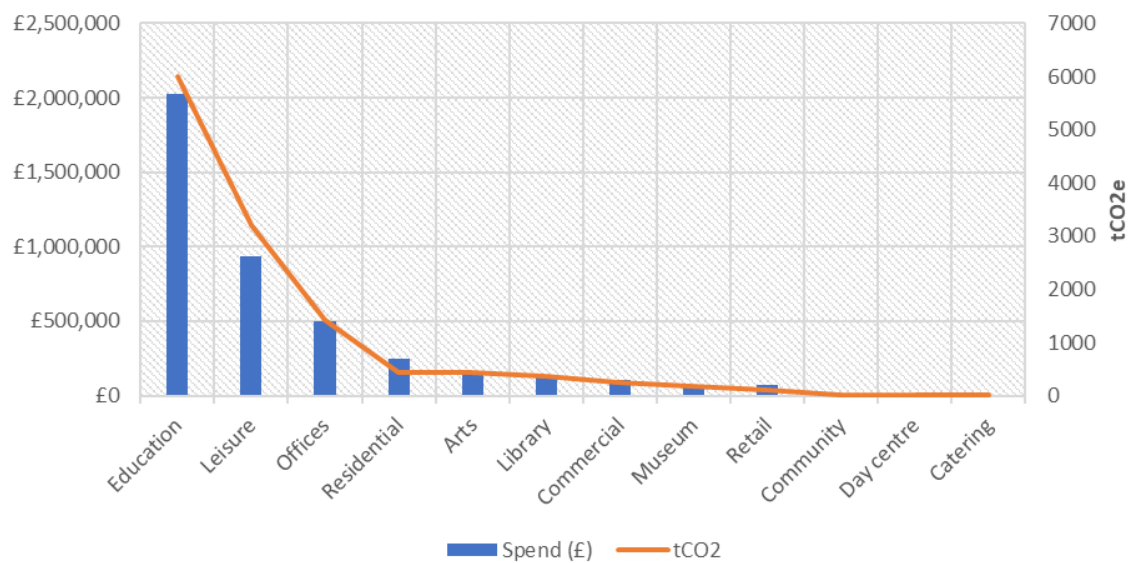


Figure 6 - Utility Spend vs Carbon Emission for Public Buildings



4.11 There is a close correlation between spend and carbon footprint and therefore a strong commercial case for investing in energy efficiency and decarbonisation measures, although there is a point where performance improvements will need to be driven by issues other than revenue savings.

4.12 The total annual utility spend of £4.43m across public buildings and carbon footprint of 12,407tCO2 p.a. in Shropshire is driving investment to save and make progressive annual efficiency savings over the next 10 years (see current and planned projects summary below).

Reporting and Data issues

Exclusions (due to insufficient data –July 2021)

- 4.13 It has been necessary to exclude the following datasets from the monitoring process until more data becomes available:
- i. Fugitive emissions (such as F-gases, refrigerants).
 - ii. Academy trusts and independent schools.
 - iii. Temporary accommodation.
 - iv. ICT data services (outsourced servers).
 - v. Commercial or residential leases – with own utilities arrangements.
 - vi. Building construction & repairs (embodied carbon and delivery footprint).
 - vii. Public transport –commissioned bus services run by external operators.
 - viii. Staff pension (for legal reasons this is reported separately).

Errata from last year (omitted this year)

- 4.14 Some errors were noted in last year's carbon reporting in the Scope 3 outsourced category where estimates were based on spend. They are identified as follows:

Scope	Category	Organisational Scope	2019/20
3	Building Construction & Repairs	• Procured service*	16,263
3	Highways Maintenance	• Procured service*	6,926

- 4.15 There was not enough information to make an accurate estimate based on contract spend for building construction and repairs and highways maintenance. So, these estimates have been excluded from both the baseline year and this year. The previous methodology based on the DEFRA dataset has been updated and recalculated using [ONS 2019](#) carbon intensity data. Accurate fuel data has since been submitted for highway's maintenance, so there is now no need to calculate performance using spending on fuel. As a result of this, the baseline FY2019/20 has been revised as shown in Table 10 below:

Table 10 Revised Carbon Emissions for 2019-20

Scope	Emissions Type	Emissions (tCO ₂ e)	Percentage of gross
Scope 1	Heating	1,688	5%
	Fugitive emissions - no data	0	0%
	Authority's fleet	621	2%
Scope 2	Electricity	2,643	7%
Scope 3	Staff travel	3827	11%
	Maintenance fleet	917	3%
	Transmission losses	0	0%
	Water	30	0%
	Outsourced Scope 3	25,543	72%

Scope	Emissions Type	Emissions (tCO ₂ e)	Percentage of gross
Gross emissions		35,269	100%
	<i>Carbon reduction from recycling, reuse, carbon capture and storage (in setting total)</i>		-33,605
	FY2019/20 Net emissions		1,665

Shropshire County Pension Fund

- 4.16 It was highlighted at COP26 that there is an urgent need to decarbonise global financial assets and equity. The global financial industry has started the process to leverage \$103 trillion assets globally from the 6 largest investor alliances and developed countries to commit to mobilise \$100bn annually.
- 4.17 In July 2020, Shropshire Council resolved to ask the Pension Committee to follow best practice by:
- Adding a statement to their strategy that climate change constitutes financial risks to the fund.
 - Setting a 3-year timescale for the reinvestment of funds currently invested in fossil fuel dependant assets.
 - Developing an investment strategy consistent with sustainable development goals and developing a local sustainable economy.
- The Council also recognised that fossil fuel investments constitute part of its 'carbon footprint' and resolved that this element should be reported on within our annual carbon reporting.
- 4.18 Assuming that the annual contribution to the fund from staff salaries for FY2020-21 is £68,792,000 then the carbon footprint for this annual contribution is around 14,000 tCO₂e. The carbon footprint of the total current equity investments in the fund is estimated at 171,697 tCO₂e.
- 4.19 The carbon footprint associated with the staff pension scheme was reported as part of the Shropshire County Pension Fund Climate-Related Disclosures (TCFD), although Shropshire Council is only responsible for a proportion of the reported performance since a large number of other organisations also contribute to the scheme. The total staff salary contribution for period 2019/20 is set out in the Annual Report 2019/20. The Pensions Committee has subsequently adopted a Climate Change Strategy & Stewardship Plan and further reporting is expected as part of the annual report for 2020-21.

5. County emissions for Shropshire

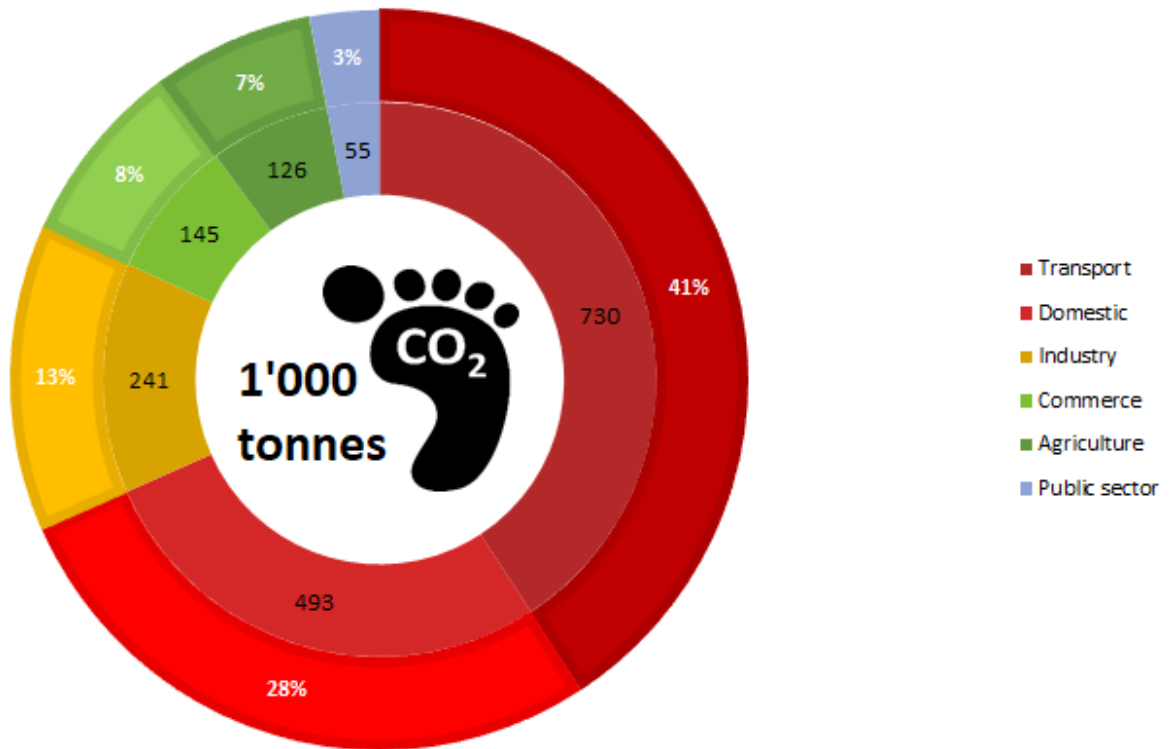
- 5.1 As noted above, Shropshire Council's corporate emissions represent less than 1% of the total for Shropshire, but council services can contribute significantly to the objective of decarbonising county-wide emissions from domestic property, industry & commerce and transport. Latest information about county-wide emissions are set out below.

Table 11 Shropshire Carbon Emissions Ranked by Sector:

<i>Shropshire County 2019 (tCO2)</i>	1,765,000	% of total
<i>Transport</i>	730,000	43%
<i>Domestic</i>	493,000	29%
<i>Industry</i>	164,000	10%
<i>Commercial</i>	145,000	8%
<i>Agriculture</i>	126,000	7%
<i>Public Sector</i>	55,000	3%

Figure 7 – Shropshire Carbon Emissions by Sector 2019

SHROPSHIRE 2019 = 1,765 KTCO2



Household emissions

5.2 Approximately 40% of UK emissions comes from households. Based on the Shropshire population of 323,136 and 141,085 active households in 2019. The carbon footprint as a proportion of the county total is 12.5t per household or 5.5 tCO2 per person. However, this is not necessarily a fair since approximately 30% is non-domestic activities. So therefore, a fairer way to represent just domestic activities is apportioned in the table below.

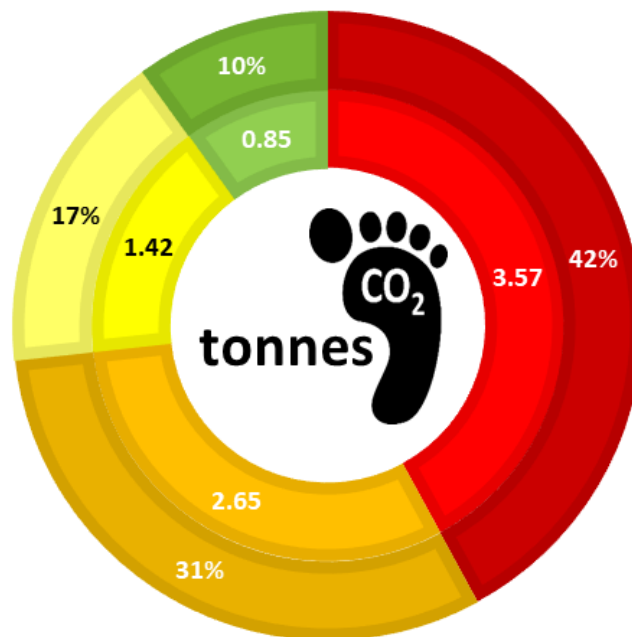
Table 12 Carbon Emissions per Person and per Household 2019

	Per person (tCO2)	Per household (tCO2)	As a %
<i>Transport</i>	1.6	3.57	42%
<i>Heating</i>	1.2	2.65	31%
<i>Flights</i>	0.6	1.42	17%
<i>Electric</i>	0.4	0.85	10%
TOTAL	3.68	8.48	100%

Figure 8 – Shropshire Carbon Emissions by Household 2019

**SHROPSHIRE HOUSEHOLD (2019)
= 8.48 TCO2**

■ Transport ■ Heating ■ Flights ■ Electric



Note: this excludes goods or services bought/consumed from within the UK or overseas.
Target for 2025 (household)

6. Project summary

6.1 To deliver on our adopted Climate Strategy, the Council is developing and implementing a wide range of projects and initiatives, both to reduce its own carbon footprint and help Shropshire businesses and communities to do the same. These are summarised in the table below, and are colour coded to indicate their stage of development.



Power Down (Carbon Footprint Reduction)

1. Low Carbon Transport:

Project / Initiative	Budget	Carbon Saving	Corporate or County-wide focus	Latest position
Shropshire Goes Electric	£12k	n/m	County-wide	<ul style="list-style-type: none"> Successful event held at Shrewsbury Town Football Club in November attended by vehicle manufacturers, chargepoint installers and cycle companies and around 1500 people Event likely to be repeated in Summer 2022
EV Charging infrastructure	£2m	n/m	County-wide	<ul style="list-style-type: none"> Agile Streets chargers - 24 current installations (100% Government Grant); OZEV chargers – 25 current installations (75% Government Grant); new OZEV application for a further 180 chargers planned by March 2022; Exploring potential for public rapid charger at new BC business Park; Amey Consulting appointed to complete detailed travel analysis to support more chargers in future
Countryside Service electric ATV	£1,800	1t CO2e/yr	Corporate	<ul style="list-style-type: none"> Additional cost to replace an existing diesel vehicle with an electric alternative, including recharging point.
Shropshire Hydrogen Hub	TBC	TBC	County-wide	<ul style="list-style-type: none"> Shropshire is part of the H2HGV project : https://www.era.ac.uk/H2GVMids which is testing the use of green hydrogen as a commercial vehicle fuel across the Midlands. As part of this, there may be an opportunity to locate a green hydrogen manufacturing plant and refuelling station at Battlefield.
Flaxmill EV car club	TBC	TBC	County-wide	<ul style="list-style-type: none"> Working with Historic England and potential car club organisations to explore creating a community car club at the refurbished Flaxmill site for us by business tenants and the local community
Bus Back Better Bid	TBC	TBC	County-wide	

2. Buildings - Energy Efficiency improvements:

Project / Initiative	Budget	Carbon Saving	Corporate or County-wide focus	Latest position
Housing retrofit	£7m	TBC	County-wide	<ul style="list-style-type: none"> Working with Housing Associations on a retrofit programme for energy efficiency and low carbon heating options for the private sector and social housing and to address identified fuel poverty
Retrofit of SC building assets	£1m	108t CO2e/yr	Corporate	<ul style="list-style-type: none"> Public Sector Decarbonisation Fund: BEIS / Salix 60% grant for energy efficient lighting and heating and renewable energy improvements to 5 buildings; SePuBu Project: 60% ERDF grant for energy efficiency improvements to around 6 Shropshire Council Buildings; Working with Property Services Group/ external advisers to prepare to identify and prioritise further improvements to around 90 Shropshire Council buildings including metering issues, heating controls and staff training.
Updated Corporate environmental building standard	TBC	TBC	Corporate	<ul style="list-style-type: none"> The Council's corporate policy which establishes minimum standards for new corporate building projects is being updated to take full account of lifetime carbon performance and to focus on operational performance rather than relying purely on EPCs and BREEAM accreditation.

3. Corporate governance:

Project / Initiative	Budget	Carbon Saving	Corporate or County-wide focus	Latest position
Annual carbon reporting	n/a	TBC	Corporate	<ul style="list-style-type: none"> Report to Council January 2022
Service level climate champions / COG	n/a	TBC	Corporate	<ul style="list-style-type: none"> Green Champions are going well with 6 Climate Talks delivered, 4 more lined up in the spring. This is backed by the Climate Officer Group to ensure representation across all services.
Staff and member Carbon Literacy and Climate training	TBC	n/a	Corporate	<ul style="list-style-type: none"> Engage external provider to deliver carbon literacy training to help staff and members to better understand the climate emergency and their role in helping to address it; Carbon Literacy Trust accredited training for Cabinet and Executive Directors booked in December.

Project / Initiative	Budget	Carbon Saving	Corporate or County-wide focus	Latest position
Procurement policy	TBC	TBC	Corporate	<ul style="list-style-type: none"> Update procurement guidance to include consideration of carbon performance and work with supply chain to measure and reduce carbon from commissioned goods and services
Warp-It	n/a	74t CO2e to date	County-wide	<ul style="list-style-type: none"> 491 members 74,058 kg CO2 saved, 31 cars off the road, 33,296kg waste avoided, 101 trees equivalent, £130,395 savings on procurement and disposal costs. £21,600 saving on admin costs and 33 days in staff time. https://www.warp-it.co.uk/company/shropshirecouncil/metrics
Dedicated Climate Change Media post	TBC	TBC	Corporate	<ul style="list-style-type: none"> Planned for 2022, including support for media activity by SCAP and other environmental groups.
Staff incentives for low carbon behaviour and living	TBC	TBC	Corporate	<ul style="list-style-type: none"> Work with HR colleagues to develop an offer for staff to help improve their domestic energy efficiency and reduce their carbon footprint through access to insulation, home heating and renewable energy products and services

4. Supporting the transition to a low carbon economy

Project / Initiative	Budget	Carbon Saving	Corporate or County-wide focus	Latest position
ICS Climate Change Working Group	n/a	n/a	County-wide	<ul style="list-style-type: none"> Working group established to prepare a joint 'Green Plan' for adoption by the Shropshire ICS Board in March 2022;
Grant support for SCAP	TBC	TBC	County-wide	<ul style="list-style-type: none"> Energy mapping Shrewsbury Green Doors Bishops Castle Community Heat Network
Supporting business engagement with climate change and carbon reporting (Kanopi tool)	£11k	TBC	County-wide	<ul style="list-style-type: none"> Grant support to Shropshire Climate Action to engage an external provider to provide a free service to up to 500 Shropshire businesses to help them to measure and improve their Carbon Footprint and environmental performance through tailored reporting and Action Plans, and certification;
Council Tax letter leaflet	n/a	n/a	Both	<ul style="list-style-type: none"> Inclusion of short leaflet with key messages to promote public engagement and decarbonisation



Power Up (Renewable Energy Generation and Storage)

1. Renewable Power:

Project / Initiative	Budget	Carbon Saving	Corporate or County-wide focus	Latest position
Maesbury solar farm	£2m	14,700 tonnes (490 tonnes/yr)	County-wide	<ul style="list-style-type: none"> A Council decision is required on increased capacity (January 2022) The project has the potential to deliver 2MW capacity of power to local business off-takers via a private wire micro-grid.
Boars Den Solar	TBC	TBC	Corporate	<ul style="list-style-type: none"> Potential to establish a 3MW solar farm on former landfill, supplying public buildings or the grid.
Shrewsbury Weir Hydro	£3.5m	TBC	Corporate	<ul style="list-style-type: none"> SC is working with STC and local investors to refresh the scheme previously agreed in 2015. There is potential to establish a private wire connection to Shropshire Council premises or a local heat network in Shrewsbury Town Centre. The hydro system would deliver 0.4MW of renewable power throughout the year.
Potential for Joint Energy generation and private wire supply to hospital sites	TBC	TBC	Both	<ul style="list-style-type: none"> Work to establish feasibility of establishing solar farms to supply power through private wire to hospital premises or to power EV charging facilities

2. Low Carbon Heat

Project / Initiative	Budget	Carbon Saving	Corporate or County-wide focus	Latest position
Heat networks	£70k	TBC	Both	Detailed feasibility study to establish feasibility of establishing a heat network in North Shrewsbury (heat from Battlefield ERF) and a separate study to assess the potential for a town centre heat network in Shrewsbury
Bishops Castle Community Heat Network	TBC	TBC	County-wide	Support for community-led efforts to test the feasibility of establishing a community heat network in Bishop's Castle, powered by community-owned renewable power generation.



Biodiversity, Carbon Capture and storage

1. Tree Planting

Project / Initiative	Budget	Carbon Saving	Corporate or County-wide focus	Latest position
Community Tree Scheme	£32k	TBC	County-wide	Over 27,000 trees have been allocated in the 2021 to 2022 planting season. Since 2010 around 96,000 individual trees have been planted and 70,000 trees for hedges have been planted.
Queens Green canopy	£5k	None in current year. Up to 360 tCO ₂ in about 40 years when trees mature	County-wide	Larger trees and a commemorative plaque are being made available for every parish in Shropshire that wants one. Several have already requested a tree and plaque.
Trees Outside Woodland	TBC	TBC	County-wide	DEFRA funding to test different approaches to encouraging the planting of trees in situations not considered to be true woodland, including hedgerow trees, urban trees, single or small clusters of trees within fields, orchards, and within crops (agroforestry)

2. Land Management

Project / Initiative	Budget	Carbon Saving	Corporate or County-wide focus	Latest position
Shropshire Council Carbon Capture & Storage	TBC	TBC	Corporate	Assessment of Council owned land for potential to enhance carbon storage to generate carbon credits and Biodiversity Net Gain payments. Development of a map tool to create an investment portfolio for natural capital that private landowners can add to.
Biochar demonstrator	TBC	TBC	Both	Potential to replicate an existing mobile pyrolysis unit <u>currently being trialled</u> in Birmingham to test the technology in a rural context. This produces biochar, oils and gasses from wood chip waste resulting from tree management. The process attracts carbon credits and can also deliver flood management and water quality benefits.

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