

Appendix 7: The Anthesis Report – Executive Summary

EXECUTIVE SUMMARY SOUTH WARWICKSHIRE'S CLIMATE EMERGENCY

Report Overview & Scope

This report was jointly commissioned by Warwick District Council and Stratford-on-Avon District Council in response to their climate emergency declarations and ambitions to achieve district-wide net zero emissions by 2030. Both Councils recognise that climate issues do not stop at the district boundary and that there is considerable value in working collaboratively to tackle climate change across South Warwickshire. This report will be used to help inform the nature and extent of interventions needed to quickly and effectively achieve emissions reduction within South Warwickshire.

Report Objectives:

1. Provide a better understanding of South Warwickshire's carbon footprint using a location-based accounting approach and build on existing work to date;
2. Explore the science-based carbon budget and emissions reduction pathways for both Districts;
3. Analyse the land use and agricultural footprint as well as carbon sequestration potential for Stratford-on-Avon District, given its rural nature; and
4. Reaffirm and identify a number of emission reduction interventions and milestones for both Districts.

Warwick & Stratford-on-Avon District Councils | Executive Summary

South Warwickshire's Carbon Footprint

The chart below shows South Warwickshire's emissions profile for 2017, compiled using the SCATTER Inventory Tool. The profile below includes all emissions generated within both district-boundaries (scopes 1, 2 & 3). In 2017, South Warwickshire's energy system was responsible for net emissions totalling 2744.5 ktCO₂e. This is composed of 1259.6 ktCO₂e from Warwick District and 1484.9 ktCO₂e from Stratford-on-Avon District. The majority of emissions across South Warwickshire resulted from buildings & facilities (40.6%) and transport (52.4%).

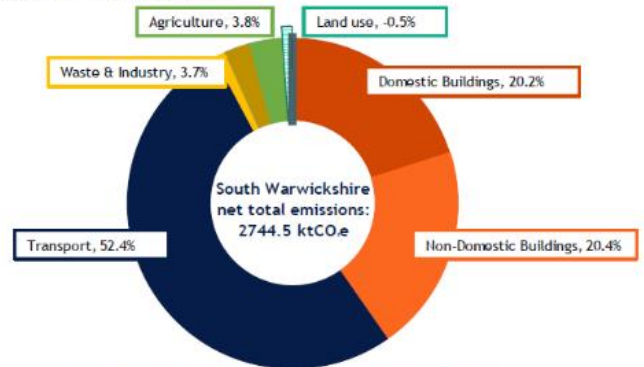


Figure 1: SCATTER 2017 inventory for South Warwickshire, shown by sub-sector.

EXECUTIVE SUMMARY LAND & AGRICULTURAL EMISSIONS STRATFORD-ON-AVON

Land & Agricultural Emissions Overview

This section of the report provides further analysis into emissions from the natural environment and agriculture within Stratford-on-Avon, given the more rural nature of the District.

Total gross emissions from agriculture and land use have been estimated at 155 ktCO₂e according to the most recent data. A breakdown of the emissions can be seen opposite in figure 2.

Of the gross emissions, livestock is the dominant source, responsible for approximately 94 ktCO₂e (64% of the gross total for agriculture and land use emissions). Emissions from fertiliser are responsible for approximately 32 ktCO₂e (22% of the total).

The net figure for emissions is lower, at just under 146 ktCO₂e, owing to land use changes within the district acting as a net carbon sink. Land use, land use change and forestry (LULUCF) is responsible for 8 ktCO₂e of net sequestration, or removal of carbon emissions from the atmosphere, giving a net total of 146 ktCO₂e.

Detailed analysis of these key agriculture & land use emission sources and emissions reduction scenarios can be found in Chapter 3 of the main report.

Warwick & Stratford-on-Avon District Councils | Executive Summary

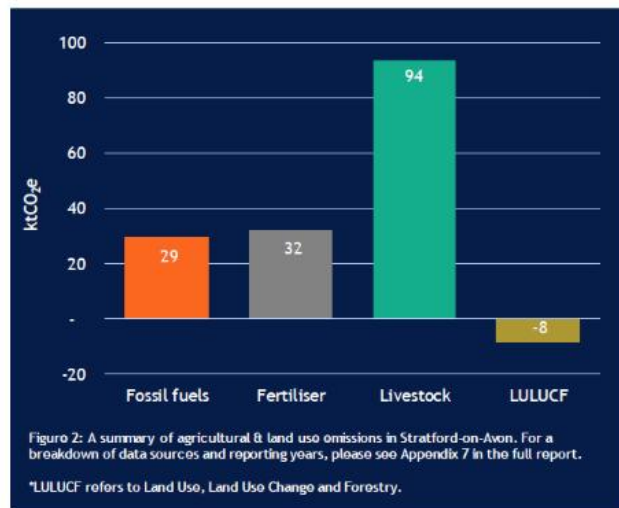


Figure 2: A summary of agricultural & land use emissions in Stratford-on-Avon. For a breakdown of data sources and reporting years, please see Appendix 7 in the full report.

*LULUCF refers to Land Use, Land Use Change and Forestry.

EXECUTIVE SUMMARY

SOUTH WARWICKSHIRE'S DECARBONISATION PATHWAY

South Warwickshire's SCATTER Pathway

The graph to the right shows two possible future emissions pathways for South Warwickshire as modelled by the SCATTER Pathways Tool compared to a Paris-aligned recommended reduction pathway.

The blue line represents the "business-as-usual" (BAU) emissions trajectory if no significant action was to be taken other than the greening of the National Grid. The green line tracks maximum ambition, requiring South Warwickshire to act significantly beyond national policy. Adoption of a High Ambition Pathway delivers emissions reductions of 55% by 2030.

Despite aggressive climate change action, hard-to-remove residual emissions persist. Whilst emissions from most sectors are greatly reduced, the scale of improvement is not enough to reach net zero by 2030. Further ambition and additional technological and nature-based solutions will need to be considered to close this "gap".

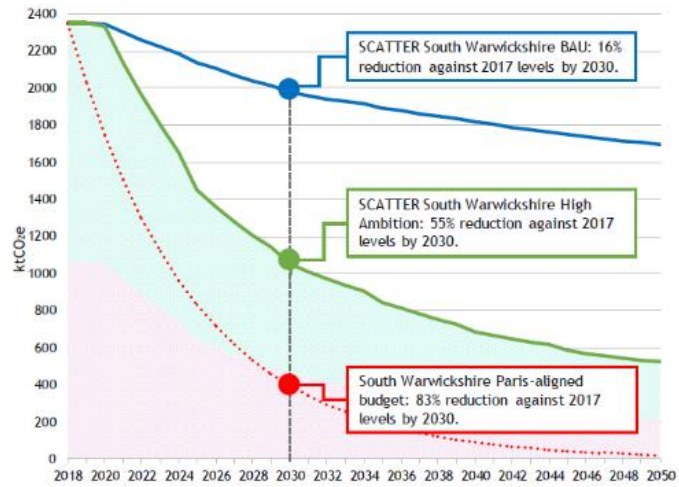


Figure 3: Future emissions pathways for South Warwickshire (2018-2050), with Stratford-on-Avon's high ambition pathway highlighted in teal and Warwick's high ambition pathway highlighted in purple.

EXECUTIVE SUMMARY

SUMMARY OF INTERVENTION MEASURES

Emissions Reduction Interventions

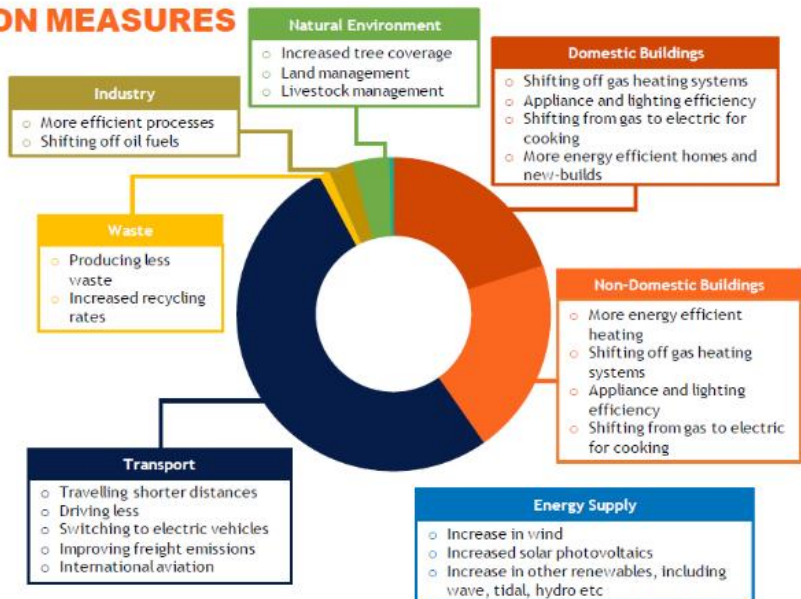
The report assesses a number of emission reduction intervention measures considered within the SCATTER Pathways Tool (summarised opposite). Activity in each of these areas underpins the pathways' trajectories.

Measures have been grouped into different sectors, which also link directly to the sectors described within the annual emissions profile.

Each group of measures has activity focused on demand-side reductions, switching to electrified systems, or greening energy supply.

The SCATTER measures are not exhaustive, but help to define "what needs to happen" rather than answering the question of "how will Warwick and Stratford-on-Avon get there?".

Further detail on the level of ambition and milestones of each intervention are provided in detail in the full report.



EXECUTIVE SUMMARY

CARBON SAVINGS TO 2030 & RECOMMENDATIONS

Carbon Savings Analysis

SCATTER also provides insights into the activities that have the most significant effect on reducing the emissions total within the model. The table opposite acts as a means of “ranking” the importance of these interventions in terms of their carbon impact. Emissions savings are presented as a cumulative total for the period 2020 - 2030.

Under this analysis, on-road transport interventions demonstrate the highest potential for emissions savings and improvements to domestic and non-domestic space heating and hot water also offer significant savings potential. Energy supply savings must be considered in isolation of demand-side measure savings to avoid double counting.

Recommendations

Further discussion will be needed to understand Warwick District Council and Stratford-on-Avon District Council's potential to influence and the feasibility of each measure. In order to achieve a 55% emissions reduction by 2030, both Council's should consider the following:

- Working together to develop a joint Climate Action Plan
- Continue to engage with key local stakeholders
- Consider a variety of funding streams to support financing carbon reduction
- Combine efforts to decarbonise council-owned assets, enabling both District Councils to take a leadership role and demonstrate best practice

Warwick & Stratford-on-Avon District Councils | Executive Summary

| Sector | Subsector | Cumulative Savings (2020 - 2030) | |
|------------------------|--|----------------------------------|---------------------------|
| | | Warwick | Stratford-on-Avon |
| Domestic Buildings | Domestic space heating and hot water | 526 ktCO ₂ e | 518 ktCO ₂ e |
| | Domestic lighting, appliances, and cooking | 90 ktCO ₂ e | 79 ktCO ₂ e |
| Non-Domestic Buildings | Commercial space heating, cooling and hot water | 195 ktCO ₂ e | 231 ktCO ₂ e |
| | Commercial lighting, appliances, equipment, and catering | 95 ktCO ₂ e | 81 ktCO ₂ e |
| | Industrial buildings & facilities | 103 ktCO ₂ e | 91 ktCO ₂ e |
| Transport | On-road transportation | 1,464 ktCO ₂ e | 1,705 ktCO ₂ e |
| | Aviation | 12 ktCO ₂ e | 11 ktCO ₂ e |
| Waste | Solid waste disposal | 4 ktCO ₂ e | 4 ktCO ₂ e |
| Industry | Industrial processes | 29 ktCO ₂ e | 51 ktCO ₂ e |
| Natural Environments | Land use and livestock | 14 ktCO ₂ e | 52 ktCO ₂ e |
| | Land use | 7 ktCO ₂ e | 17 ktCO ₂ e |
| Energy Supply | Renewable energy generation | 1,037 ktCO ₂ e | 1,051 ktCO ₂ e |

Table 1: Summary of Cumulative Carbon Savings (2020 - 2030) across Warwick and Stratford-on-Avon.