

Strategic Recommendations for Climate Action

March 2026

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SUPPLEMENTARY DOCUMENTS (not included as part of this document but available separately)

A – Climate Change technical information for East and West Surrey

B – Climate Change policies programmes and actions in East and West Surrey

EXECUTIVE SUMMARY

Following Local Government Reorganisation, new authorities are invited to use this document to inform decisions they will need to take in their role to reduce carbon emissions at a local level. It proposes an approach that aligns or exceeds national ambition but is delivered in a way which builds on Surrey's existing strengths and works to the benefit of residents, communities and businesses.

Local Government Reorganisation presents a key opportunity to bring together the actions relating to climate change that are currently undertaken by 12 separate organisations and bring them together into a more consolidated and focussed set of approaches.

A review of the evidence highlights Surrey's current carbon emissions and the key shifts that need to take place in our buildings, energy, transport, consumption, land and public sector. Making these changes would reduce Surrey's direct carbon impact from 5.3Mⁱ tonnes to under 0.4Mⁱⁱ and significantly reduce the 21Mⁱⁱⁱ tonnes of carbon arising outside of Surrey but driven by goods and services consumed by Surrey's residents, businesses and public sector. This can be done collectively by taking a proactive approach to transforming our places and making climate-friendly choices the default in a way that is fair for everyone.

Evidence from the successes of Surrey's current climate plan^{iv} shows how we can improve the lives of residents through positive climate action. Homes have become warmer, energy bills have become lower, people feel empowered to protect nature and new job opportunities have been created. For example, action from the current plan has enabled annual bill savings of around £9.3M across residents, businesses and public sector organisations. However, if we don't continue to reduce carbon and mitigate the risks brought about by climate change, evidence suggests that economic output will be lower^v, nature will continue to decline^{vi}, the cost of maintaining key infrastructure will increase^{vii} and it will lead to worse health outcomes and health inequalities^{viii}. This in turn will put more pressure on public services leading to higher costs compared to taking a preventative approach^{ix}.

For the development of these strategic recommendations for future action, 720 residents, some schools, parishes and community groups took part in surveys and in-depth workshops to consider their attitude towards climate change, and how it links to their broader priorities. It found that climate change continues to be a top concern for residents. In a representative survey of 600 residents, 83% of residents say they have personally experienced the impacts of climate change. Over half want to become more sustainable in their own lives but face barriers, and over half are looking for local government to do more^x.

These workshops identified many barriers and potential solutions that respondents would like to see, which both reduce carbon emissions and directly improve neighbourhoods, resident livelihoods, health and the economy. These insights have been used to form 8 goals. The table below summarises recommendations for Local Authority action towards these 8 goals.

Table 1: Summary of options for Local Authority action

Goal	Rationale	Options for LA Action	Potential KPIs (to 2030 or beyond)	Impact for Surrey
(1) Well designed places – fit for a low carbon future	Unlock carbon reduction, climate resilience and adaptation - reducing local barriers to sustainable living.	Ensure integration of climate priorities in strategic planning, planning, infrastructure development and place making programmes.	11,000 low energy, low bill, new homes 500MW local renewable energy Recycling rates from 54% to 62% £1bn low carbon investment vehicle	Clean, safe and green spaces with more transport and digital connectivity, reducing isolation. Lower energy and water bills. An investable pipeline of projects to boost the economy.
(2) Engaged communities – empowered to deliver climate action	Bring about the conditions needed to enable residents to reduce carbon emissions locally as local authorities are unable to deliver all the change needed.	Scale up engagement, capacity building, partnerships and co-design to accelerate community-led climate change projects.	Carbon footprint of residents to below 10.7t/y 87 Parishes and 500 schools with carbon reduction plans A boost in volunteers taking climate action. 32% less residual waste	Empowered and vibrant communities creating community cohesion and improving neighbourhoods in a way which makes most sense to them. Increased wellbeing through participation and community action.
(3) Improved health and wellbeing service delivery– integrating climate and health priorities	Support Health equity in all Policies: enable co design and delivery to increase value for money; improve response to climate threats and increase benefits due to joint action.	Raise awareness and improve evidence of the links between climate change and health and increase joint delivery under the Health and Well Being Strategy.	Climate literacy and research for practitioners Environment Joint Strategic Needs Assessment Health and climate in all policies and specifically in planning Targeted health - climate delivery programme	Improvements in mental and physical health, avoiding excess deaths. Potential to reduce additional healthcare costs from being more active.
(4) Nature-based solutions – enabling carbon sequestration	Harness the carbon absorbing power of land to reduce the impact of emissions.	Develop the tools, frameworks, and partnerships needed to improve the management of public and private land. Integrate into the delivery of the Local Nature Recovery Strategy.	1.2M trees additional trees Habitat restoration including creation of wetland, unimproved grassland or woodland. 123% increase in carbon removal by land	Stabilise and reverse biodiversity decline. Improved management of flooding, with increased shade to reduce urban heating.

Goal	Rationale	Options for LA Action	Potential KPIs (to 2030 or beyond)	Impact for Surrey
(5) Safe, resilient, warm and low carbon buildings – through supporting energy efficiency and renewable energy supply	Reduce nearly half of Surrey's direct carbon emissions through the transformation of energy supply and making buildings be low carbon and prepared for extreme weather.	Improve homes, commercial and public sector buildings by stimulating the retrofit market through grants, group purchase, energy planning and co-ordination of community action.	Improve up to 41,000 fuel poor homes. Support switch for up to 80,000 “heat pump ready” and PV ready homes. Over 25MW of community spaces and schools	Healthier homes with less illness from cold and damp. Bill savings of up to £50M per year for residents, businesses and communities. Protection from oil price shocks from a smart and local energy supply. 15,400 additional low carbon skilled jobs.
(6) An integrated transport system – enabling low carbon travel choices	Reduce up to 43% of Surrey's emissions through reduction in fossil fuel vehicles.	Improve the transport network, transform transport services and work with communities to increase active travel, public transport use and a switch to electric vehicles.	100% of full bus fleet to low carbon 150% increase in bus and train passengers Integrated cycle paths for all priority routes 5,000 electric vehicle charge points	Better connected places and more choice. Walking and cycling safer, more pleasant. Affordable buses more popular with less noise and smell. Cleaner air with less traffic and congestion.
(6) A high-value economy – that supports a low carbon future	Support businesses to solve climate challenges and reduce emissions.	Support residents with skills development, businesses to drive innovation and provide enabling infrastructure to unlock sustainable growth.	Skilled local workforce to meet future needs. Improved knowledge links to increase innovative clean tech solutions. Provision of energy, transport and digital infrastructure fit for Surrey-based businesses	Retaining the county's high-value and innovative regional economies, with opportunities and investment towards a more sustainable economy with a skilled local workforce.
(8) A climate positive and efficient public sector	Public sector policies, services and spending power influence a large proportion of Surrey's emissions.	Become carbon neutral as organisations, embed climate change into all key services, lead local and regional carbon emission reduction and leverage public and private investment.	Reduction of 31kt direct carbon emissions Reduction of over 4,000kt from procured services Retrofit of all institutional buildings and fleets Low energy low bill social housing. Carbon offsetting which benefits communities Climate in all policies	Provision of excellent public sector services benefitting many residents. Significant bill and efficiency savings from public sector estate, fleet and streetlighting - releasing spend for other purposes.

As well as taking action to reduce carbon emissions, the new local authorities will be uniquely positioned to provide co-ordination, engagement, governance and reporting roles. Doing this will enable the effective interpretation of government policy for the local context and enable strong partnerships to be formed under a united set of goals. It will also encourage the participation and empowerment of many residents, community groups and influence national government and other organisations that have a bearing on Surrey's ability to reduce carbon emissions.

ABOUT THIS DOCUMENT

Building on the positive work already undertaken by Surrey local authorities, this document is designed to be a comprehensive guide and suite of options for new authorities who are looking to support residents, businesses, and the public sector and at the same time play our full part in reducing carbon emissions. It demonstrates the link with wider priorities including climate adaptation and resilience^{xi}, environmental protection^{xii}, economic growth^{xiii}, health and wellbeing^{xiv}. It is supported by two supplementary documents which contain the technical detail that is needed to quickly build carbon reduction programmes within East and West Surrey.

Part 1 - What it means to become a low carbon county by 2050: Is the summary of a comprehensive analysis and evidence review. It sets out the carbon emissions in Surrey, the major changes that need to take place to be in line with our national^{xv} and international^{xvi} carbon reduction obligations, as well as the drivers and the implications of achieving and not achieving the changes needed. Supported by **Supplementary Document A**.

Part 2 - Options for local authority action: Sets out recommended options that Local Authorities can take forward to create positive outcomes and benefits for Surrey residents through climate action. It brings together an understanding of Local Authorities' levers for action, resident priorities from a comprehensive stakeholder engagement process and builds on existing action that is already having a positive impact on health, economy and communities. Supported by **Supplementary Document B**.

Part 3 - Measuring success and Part 4 - Governance and participation: Provide the framework needed to be able to monitor and measure progress against emission reduction targets, and progress of Local Authority action in terms of carbon, bill savings and health benefits. It sets out a potential role for Local Authority to co-ordinate action with residents and communities and work with key partners to drive change. Supported by **Supplementary documents A and B**.

It is not the beginning of Surrey's journey. Eight Surrey Authorities¹ declared a Climate emergency in 2019, with two more² following suit in 2020. Surrey's Climate Change Strategy^{xvii} (2020) was formed following these announcements. Since that time, Surrey's direct carbon

¹ Surrey County Council, Elmbridge Borough Council, Guildford Borough Council, Mole Valley District Council, Runnymede Borough Council, Surrey Heath Borough Council, Waverley Borough Council, and Woking Borough Council

² Spelthorne Borough Council and Tandridge District Council

emissions have reduced by 21%^{xviii} and Surrey's Greener Futures Climate Change Delivery Plan (2021-2025^{xix}) and Borough and District-level strategies and plans^{xx} have attracted several million pounds of grant and private sector funding to improve places and reduce energy bills as well as cut carbon^{xxi}.

Looking to the future, Surrey's local government is in a time of transition. At the time of writing, Surrey County Council, and Surrey's 11 Boroughs and Districts are to be replaced by new authorities to deliver the Government's strengthened local agenda^{xxii}. Experience tells us that tackling the root causes of climate change are complex and require long-term fundamental societal changes across infrastructure, economy and the way people live their lives. This document contains the key ingredients to maintain a steady course through this time of change – retaining the ambition, continuing to deliver impactful climate action and ensuring that many partners can work effectively together with a shared set of goals.

Many residents, community groups, public sector organisations, businesses and experts have contributed to the development of this approach^{xxiii}. They identified how addressing every-day priorities, such as better-quality homes and improved health, can be helped through action which also tackles climate change. It also enabled a broad consensus around the latest evidence base and identified existing impactful action and partnerships that can be built upon.

Once formed, it will be up to new authorities to decide how to move forward. This document suggests that there is a good basis to do so, given the powerful mandate from residents, the strong underpinning evidence, and building on existing success which results in a better Surrey for the next decade.

INTRODUCTION - WHAT'S IT ALL FOR?

For most, Surrey is a great place to live, visit, work and do business. Home to 1.2M people, Surrey residents on average have a high standard of living, with a mix of desirable housing, good connectivity to urban centres, fantastic schools, healthcare, shopping, recreation and amenities. Most people consider their areas to be safe, secure and friendly. Many areas in Surrey are a source of pride where communities support each other and their local surroundings and have good access to nature. These are attributes of Surrey that we look to preserve and expand upon to ensure the prosperity and wellbeing of Surrey's residents, nature and heritage^{xxiv}.

However, this is not done by maintaining the status quo. Housing, transport, public services, environment and the economy all have an impact on the carbon emissions that cause climate change and, in turn, will be impacted by its effects. When a climate emergency was declared in 2019, climate change was already contributing to more frequent incidents of flooding, wildfires and drought. 68% of residents still consider action to tackle climate change extremely or very important^{xxv}. 83% of residents say they have personally experienced the damaging impacts of climate change in Surrey be it loss of nature, impacts of flooding, heatwaves or loss of business^{xxvi}. In addition, many are impacted by high energy bills, pollution and litter brought about by fossil fuel use. Climate Change continues to be a contributing factor in the decline of nature^{xxvii}. Many want to make positive changes to become more sustainable, support nature recovery and protect our way of life^{xxviii}.

When action is taken to reduce carbon emissions, the benefits to people, to the economy and to the environment are clear. For those who have been touched by actions already undertaken in Surrey, homes have become warmer, energy bills have become lower, people feel empowered to protect nature, new job opportunities have been created^{xxix}. The knock-on benefits of taking concerted long-term action are widespread and interconnected. For example, switching local car journeys to walking or cycling lowers air pollution, reduces fuel bills and makes us more active, which improves our mental and physical health and reduces pressure on the local health services.

It is fully recognised that a low carbon and resilient county require major shifts in the way we travel, heat and power our buildings, shop, grow food, adapt to extreme weather events and utilise nature based solutions^{xxx}. Up-front costs of tackling climate change can be significant; however, it is widely accepted that the costs of inaction are much higher^{xxxi}.

Through shaping places, improving services, convening and engaging, local authorities influence around a third of emissions^{xxxii}. Action by local authorities in Surrey, while reducing carbon, has also resulted in many additional positive benefits, including: helping 6,000 households to reduce energy bills; planting 0.6M trees; positively engaging with hundreds of schools; cleaner bus services and reduced running costs of authorities by around £4.7M^{xxxiii}. There is an opportunity to maintain or scale up these additional benefits.

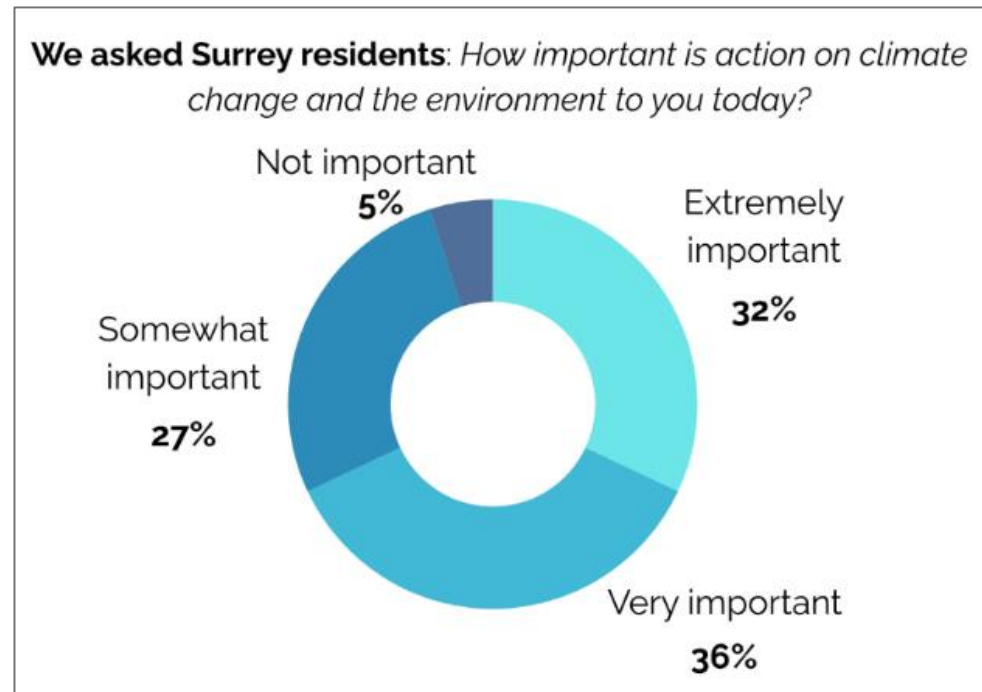
Building on this demonstrated local impact, National Government also recognises that Local Authorities are critical to achieving carbon emission reductions and meeting national^{xxxiv} and international commitments^{xxxv}. The Devolution White Paper^{xxxvi} and Bill^{xxxvii} highlight the importance of local leadership on climate change^{xxxviii}, citing responsibilities such as managing Warm Homes retrofit funding^{xxxix}, supporting the delivery of local sustainable energy^{xl}, coordinating heat networks^{xli}, and planning future energy systems. This is alongside a broader leadership role in leveraging finance and working with partners to drive change, enabling places like Surrey to scale up the proven social, economic and environmental benefits of climate action.

WHAT SURREY'S RESIDENTS THINK

Working alongside Surrey's residents has provided a rich picture of their views on climate change and has helped to clarify how actions to tackle climate change can be used to address the challenges and aspirations of residents, businesses and public sector more broadly.

When surveying a representative sample of UK residents between 2023 and 2025, Surrey's population appear to be more concerned about climate change compared to the UK average^{xlii}. Monthly surveys of residents' priorities always bring climate change into the top 5 concerns^{xliii}. Only 5% consider taking climate action as "not important"^{xliv} and over half feel that not enough is being done at a local and county level^{xlv} to address climate change.

Around 600 residents took part in the latest survey^{xlvi}. Only 17% of residents had not personally experienced impacts of Climate Change in Surrey be it loss of nature, impacts of flooding, heatwaves or loss of business^{xlvii}. Over half of residents surveyed wanted to make more environmental or healthier choices but felt that making changes would put more pressure on their lives, be too costly or they don't know how^{xlviii}. Nearly 70% have never been involved in community action and over half have never engaged their Councillor or local MP.



PART 1 - WHAT IT MEANS TO BECOME A LOW CARBON COUNTY BY 2050

1.1 INTRODUCTION

An updated evidence review and analysis have been used to set out the current carbon impact of the county, the shift needed to fully decarbonise, how these can be achieved, and related impacts on the economy, infrastructure, health and nature, both negative and positive.

More detail can be found in **Supplementary Document A** which includes technical information on the carbon emissions pathways for East and West Surrey, and information relating to the carbon emissions of their respective local authorities.

1.2 SURREY'S CURRENT CARBON IMPACT

The latest evidence at the time of writing shows that 5.3 million tonnes of carbon emissions^{3, xlix} were produced within Surrey's borders⁴. 46% arise from East Surrey and 54% from West Surrey. Emissions mainly arise from the use of electricity, gas and oil heating, petrol and diesel transport, and other gases from waste, agriculture and industrial processes. After factoring in the 4% of carbon emissions which are absorbed through the county's forest and grassland, Surrey contributes around 1.4% of the UK's emissions^l.

Consumption of goods and services driven by Surrey's residents, businesses and public sector also result in carbon emissions that occur outside of Surrey's borders. Although uncertain, it is estimated to be in the region of 21 million tonnes^{5, li}. It arises mainly from food production, manufacture of vehicles, clothing and electronics, construction materials and road and air travel taken outside of Surrey.

Surrey County Council declared its intention to be a carbon neutral county by 2050, with the support of all District and Borough Councils, in line with the requirements of the climate change act. By 2023, Surrey's direct carbon emissions had decreased by 21%^{lii} compared to 2018 which is broadly in keeping with the carbon reduction needed for Surrey to be near zero by 2050. This is mainly due to the decarbonisation of the national electricity grid^{liii} through increased renewable energy generation, improvements to buildings and technology that use less energy, switching to low carbon heating such as heat pumps, more electric vehicles driven, and lower volumes of waste. Consumption emissions have also been reducing as the supply of goods and services from outside of the County reduce.

Surrey County Council and most of Surrey's Boroughs and Districts made commitments to become carbon neutral organisations at an accelerated pace. Direct carbon emissions across all Local Authorities^{liv} have reduced by around a quarter and have created annual bill savings of around £4.7 million so far.

³ For the purposes of this document "carbon emissions" includes all gases that cause global warming, including methane, nitrous oxide and fluorinated gases.

⁴ Direct emissions refer to carbon emissions that fall under scope 1 and 2 emissions of the greenhouse gas reporting methodology.

⁵ Consumption emissions refer to carbon emissions that fall under scope 1, 2 and 3 of the greenhouse gas reporting methodology.

1.3 WHAT NEEDS TO HAPPEN BY 2050

Staying in alignment with national carbon budgets^{lv}, means making a reduction in direct carbon emissions by over 90% - from 5.3M tonnes in 2023 to 0.4M tonnes in 2050. National^{lvi} and Surrey-based^{lvii} carbon reduction modelling shows the major shifts needed by 2050 which have been summarised below.

Buildings and energy: around 90% of residential and non-residential buildings will be highly energy efficient, run off energy that is fossil fuel free, and have renewables, energy storage and smart technologies to help the electricity grid manage supply and demand^{lviii}.

Transport: The Surrey Local Transport Plan sets out plans for the decarbonisation of the transport system. A reduction in road vehicles, with cars, vans and motorbikes making up only 38% of total miles travelled. This is achieved through a threefold increase in cycling, walking, and bus use, as well as a 1.5-fold increase in rail travel, a 22% reduction in road freight mileage, and a 28% increase in water borne freight transport. 100% of remaining cars and buses will be fossil-fuel free with accessible charging points.

Goods, services and waste: Low carbon goods and services will be available for Surrey's residents to buy, and a skilled local workforce that enable the key transformation to happen within Surrey where needed. 39% less waste will be produced, 85% of which will be recycled. Businesses will enable this by operating sustainably and meeting their own net-zero targets.

Agriculture and land management: Improvements in land management that provide sustainable food, absorb more carbon, provide resilient habitats and help to reduce flooding, drought and overheating will result in a county that offers protection from the impacts of climate change and the reversal of biodiversity loss.

Public sector: Local authorities, education, the health sector and emergency services will become net-zero organisations and provide services that are in keeping with effectively tackling climate change. This includes helping to overcome barriers for residents, communities and businesses to be sustainable and protect the public from the impacts of climate change.

1.4 THE PACE AND SCALE OF CHANGE REQUIRED

Major shifts in energy, transport and land use require technology and behaviour shifts. These changes can only happen with appropriate national policies and funding, strong regional and local action from the public sector, the financial sector, businesses community groups and residents.

Table 2: Modelled changes needed to keep to the pace of carbon reductions

Surrey indicator	Baseline figure in 2018	Actual change in 2022	Change in 2030	Change in 2040	Change in 2050
Carbon emissions in Surrey (Mt CO ₂ e)	6.6M	79%	38%	16%	5%
Carbon emissions by Local Authority area	-	79%	38%	16%	5%
Local Authority collected waste (tonnes)	530,566	105%	72%	61%	61%
Proportion of waste recycled (%)	54%	54%	62%	72%	85%
Fuel poor (homes)	30,960	132%	94%	47%	0%
Households rated EPCD or below (homes)	300,000	100%	71%	34%	0%
Walking and cycling frequency (% per week)	13.6	-	167%	233%	300%
Carbon from agriculture and land (MtCO ₂ e)	-0.0774	100%	123%	143%	162%
Carbon emissions from domestic (MtCO ₂ e)	2.044	80%	42%	11%	0%
Non-residential buildings (MtCO ₂ e)	1.333	84%	50%	30%	18%
Renewable energy capacity	72	163%	712%	1033%	1354%
Carbon emissions from transport (MtCO ₂ e)	3.0934	86%	28%	11%	0.4%
Total bus passenger numbers	TBC	-	167%	233%	300%
Total rail passenger numbers	TBC	-	117%	133%	150%
Road miles (Billion miles)	8.6755	96%	75%	75%	75%
EV cars and buses (% Surrey-based vehicles)	0.89	4%	69%	100%	100%
Number of public charge points	-	1,341	-	-	-
Carbon from public buildings (MtCO ₂ e)	0.273	81%	50%	30%	18%
Carbon emissions from local authorities	42,150	74%	0%	0%	0%

⁶ These figures are not suggested KPIs for future authorities but indicate the pace of change needed in Surrey to follow the 2050 net zero carbon reduction pathway.

1.5 THE CATALYSTS FOR CHANGE

Achieving major shifts towards a low carbon future is not simple. The use of fossil fuels and potential climate impacts are interlinked in almost every aspect of our lives. A national policy framework and funding is key, and the solutions often require a multi-faceted approach that everyone must work together to resolve. Whether you are national government, a business, a public sector organisation, a community group or individual, the following factors are key to unlocking the changes needed to create a low carbon and resilient Surrey, whilst maximising wider benefits and minimising future risks.

Ensuring climate friendly choices are more attractive. One third of emissions are linked to everyday choices^{lix}. Making pro-environmental choices easier, cheaper and more accessible accelerates the purchasing habits of people towards low carbon products creating a shift towards a flourishing green economy.

Making major shifts in system-wide infrastructure. Large-scale investments in electricity grid capacity speeds up our ability to replace high carbon energy with renewables. A transport infrastructure that gives priority to public transport and safe cycling removes the dependence on road vehicles as our principal means of transport making low carbon alternatives more popular.

Unlocking finance. Successfully harnessing funding and financial solutions across public, private and voluntary sectors will secure the investment to speed up delivery and address market failures^{lx}.

Focus on long-term prevention. Only thinking about the short-term when making decisions can lead to outcomes that make long-term decisions harder. Planning for net-zero, resilience and adaptation makes for more efficient delivery - saving time and money.

Empowering places. Knowing that positive local action is essential to deliver net-zero, empowering local people will help to generate buy-in and resources to make rapid change.

Technology shifts. Uptake of new clean tech can catalyse and popularise low carbon solutions.

1.6 CONSEQUENCES OF INACTION

Even with a concerted global effort to reduce carbon emissions^{lxi}, projections indicate that by the end of the 21st century Surrey's average temperature could rise between 2.2°C and 3.5°C^{lxii}. Summers will be hotter and drier with 28% less rainfall, increasing droughts and spells of prolonged and more intense overheating in an area where water stress already exists^{lxiii}. Winters are more likely to be warmer and wetter with 15% more rainfall, making it more likely to get bouts of heavy downpours which increase flood risk^{lxiv}. There is already a clear case for adapting to the realities of climate change. For example, every pound invested in flood defences prevents eight pounds of damage^{lxv}. By reducing carbon emissions and effectively managing the impacts of climate change, we can play our part in preventing the following:

Poorer health, worse health inequalities, and increased pressure on health, social care and emergency services: The UK Health Security Agency recognises many health indicators are being undermined by climate change, increasing the fragility of the global systems that health depends on, and increasing the vulnerability of populations to coexisting geopolitical, energy, and cost-of-living crises^{lxvi}. Health outcomes will worsen without options to live, work and travel more sustainably. Extreme weather events caused by climate change increase the risk of injury and death and are a risk factor for cardiovascular and respiratory problems, infectious diseases, tropical illnesses and mental health problems^{lxvii}. These impacts can disproportionately impact older people, children, people with pre-existing health conditions, disabled people, and those living in institutions or experiencing homelessness. It will provoke more public health emergencies, increasing demand on health and social care services^{lxviii}.

More disruption and delays from infrastructure that is not fit for purpose: Dealing with emergencies such as flooding and wildfires already costs Surrey millions of pounds per year. Traffic levels in Surrey are already nearly double the national average^{lxix} causing some parts of Surrey to have the highest levels of air pollution in the Country^{lxx}. Climate events cause travel disruption and contribute to the need for higher levels of road maintenance^{lxxi} which cost around £135M in 2024/5^{lxxii}. Extreme heat, floods and wildfires will accelerate damage to infrastructure, creating more potholes, buckle railway tracks, cause more power outages and reduce water supply. As well as disruption, this puts homes and businesses at risk through higher insurance costs, and higher costs of maintaining the transport, energy and water services^{lxxiii}.

Lower agricultural productivity and loss of nature: Surrey Nature Partnership's State of Surrey's Nature report highlighted that habitat loss, pollution and threat of non-native species continue to contribute to an overall decline, with 1 in 9 Surrey species now being locally

extinct^{lxxiv}. More unpredictable weather patterns combined with greater extremes of wet and drought put additional pressure on important species and habitats. These trends also impact agriculture whose businesses are most vulnerable to the risk of climate change. Drier summers and wetter winters, combined with changing threats from pests and diseases are key factors affecting the yields of traditional British crops. For example, in the UK for wheat, three of the five worst UK harvests on record have occurred since 2020^{lxxv}.

Loss of business: The World Economic Forum's Global Risks Report^{lxxvi}, shows four out of the five top risks over a ten-year horizon are linked to climate change, and nature loss, and the risks are increasing over time. Climate change presents a risk to businesses and their supply chains as changes in weather patterns disrupt and reduce the availability of natural resources that make up the raw materials for production. Climate change can impact transportation and energy prices, increasing costs to businesses and reducing economic productivity^{lxxvii}. 15% of survey respondents already attribute loss of business to climate change in Surrey^{lxxviii}. The Government's 2035 Modern Industrial Strategy recognises growth which is in line with net-zero and environmental objectives – identifying clean energy as a key potential growth area^{lxxix}. Businesses must be prepared and have the right skills to take advantage of green growth opportunities - expected to increase in Surrey by 8% per year to 2030^{lxxx}.

PART 2 - OPTIONS FOR LOCAL AUTHORITY ACTION

2.1 INTRODUCTION

As around 97% of Surrey's direct emissions are produced because of actions from residents and businesses, it is recognised that local authorities cannot be solely responsible for decarbonising Surrey. However, it is also recognised that achieving significant carbon emission reduction cannot happen without local action. The impact of local authorities on climate change is dependent on national government policy, the level of funding that can be leveraged, the level of ambition that local authorities have to embed climate change into organisations and work with partners to effect change.

Many existing strategies, policies, services and projects that apply at a County or a local level seek to protect and improve the lives of Surrey residents. These reflect the everyday priorities that residents have, which enable public safety, good health and wellbeing, quality homes, job opportunities, affordable living, access to high quality services, accessible transport options and access to nature^{lxxxix}.

In depth workshops^{lxxxix} held across East and West Surrey with around 120 residents, schools and parishes, and a wider review of resident views⁷, identified their top priorities. They identified many potential solutions that they would like to see which both reduce carbon emissions and directly improve neighbourhoods, resident livelihoods, health and the economy. These insights have been formed into 8 key goals. For each goal, the following sections set out the kind of actions that Local Authorities could lead on and the potential scale of outcomes and benefits that residents could have if an ambitious climate change programme was put in place.

More detail is out in **Supplementary document B**. It sets out a summary of the legal framework, potential levels of Local Authorities influence, best practice case studies for East and West Surrey, lists of existing policies strategies projects and programmes linked to climate action for East and West Surrey and a sample action plan.

⁷ Including engagement undertaken to develop the 2030 community vision, insights from community link, resident comments on SCC websites, results from the Elmbridge Citizens Panel and consultation responses to key Surrey-wide policies and strategies such as the Local Nature Recovery Strategy.

2.2 WHERE LOCAL AUTHORITIES CAN ADD VALUE

Through policies, public services, place shaping and working with others, local authorities influence around a third of emissions^{lxxxiii}. Paragraphs A to F show the levels of influence which indicate the increasing ambition and reach of climate action^{lxxxiv}, with a few examples of the ways in which Boroughs, Districts and the County Council have already been delivering.

A. Direct control: Surrey County Council has reduced its direct carbon emissions by 47% since 2019, saving over £4M per year in running costs through delivery of LED streetlighting, and improvements to Council buildings^{lxxxv}. Guildford Borough Council have incorporated the cost of carbon into all decision-making. Runnymede is converting their waste fleet to run off waste oils, reducing the single largest source of emissions from their organisation by around 90% with no significant additional cost^{lxxxvi}.

B. Procurement and commissioning: Reigate and Banstead, have sustainable procurement guidance that sets an expectation for suppliers to become net-zero organisations and deliver low carbon services^{lxxxvii}. Surrey County Council has provided a tool to help suppliers calculate and report carbon emissions^{lxxxviii}.

C. Place shaping: Epsom and Ewell's draft local plan proposes high sustainability standards that reduce carbon emissions from new builds and lowers bills for occupants^{lxxxix}. Waverley Borough Council's Healthy Homes Strategy^{xc} includes securing over £5M to improve the energy performance of social housing which improves affordability for residents at risk of fuel poverty. Spelthorne's award-winning leisure centre is being built with the highest possible standards of energy efficiency^{xc}. Following the success of Woking's district heat network^{xcii}, Surrey Heath is undertaking a feasibility study to capture and effectively use waste heat.

D. Showcasing: Tandridge's climate change event highlighted actions that staff could take to embody climate change into their work and personal life. Sustainable Mole Valley awards celebrated the efforts of individuals, community groups and businesses to address climate change^{xciii}.

E. Partnerships: All authorities and key stakeholders have come together to simultaneously address all barriers to the low carbon retrofit through the development of Surrey's first retrofit Strategy launched in 2026, and action to address fuel poverty^{xciv, xcv}.

F. Involving, engaging and communicating: Elmbridge is considering how to enact recommendations from the first climate change citizen's panel in Surrey^{xcvi}.

2.3 GOAL 1- WELL DESIGNED PLACES – FIT FOR A LOW CARBON FUTURE

Why it matters

The way in which places function has a strong influence on the behaviour of those who live, work and visit it. As 97% of emissions result from the day-to-day activities of residents and businesses in the County, creating an environment which reduces the practical barriers to living sustainable lives is key to unlocking significant carbon reduction^{xcvii}.

What local authorities can do

In line with greater devolved powers to Local Government, ensuring climate priorities are integrated within strategic planning and place making programmes will enable delivery of key infrastructure needed to make it easier to use low carbon transport options, reduce energy consumption, prevent waste and access local and sustainable goods and services. Creating low-cost investment mechanisms for climate and nature will unlock growth, as has been demonstrated by Bristol City Council, with their Bristol City Leap initiative^{xcviii}.

Potential targets for 2030 or beyond⁸

Integrated safe cycleways for all priority routes^{xcix}.

11,000 new affordable low energy low carbon homes^c.

Infrastructure that meets future energy needs of up to 500MW of renewables and at least two additional heat networks^{ci}.

Recycling rates of over 62%^{cii} (from 54% in 2024).

A low carbon investment vehicle of up to £1bn^{ciii}.

The wider benefit for Surrey

Transforming energy and buildings will make Surrey an attractive place for business, lower people's bills and unlock an investable pipeline of projects worth over £9bn^{civ} – bringing a boost to the local economy. A future Strategic Authority in particular will have a primary role in creating local heat networks that will provide lower cost energy. Communities which are rural or economically disadvantaged would have more digital and transport connectivity, making people feel less isolated. Lower levels of petrol and diesel traffic will reduce air pollution, congestion and noise – improving health outcomes and making Surrey a more pleasant place to live.

⁸ These potential targets have been collated through engagement with services. They are the most ambitious achievable targets agreed based on current projected levels of funding, and for this reason may differ at this time to the trajectory indicated in table 2.

2.4 GOAL 2 - ENGAGED COMMUNITIES – EMPOWERED TO DELIVER CLIMATE ACTION

Why it matters

Engaged and empowered communities bring about the conditions needed to reduce carbon emissions as individuals^{cv}, for communities and within neighbourhoods^{cvi, cvii}. Although many people in Surrey live sustainable lifestyles and do incredible work to support their communities^{cvi}, some feel dissatisfied and want to do more. This is in part due to communities feeling that their voices are not heard. Furthermore, they cite a need for focussed leadership, greater collaboration and more direct engagement.

What local authorities can do

Recognising that our communities are the most powerful agents of change, scaling up engagement around opportunities for sustainable action and involvement in local decisions would increase public participation and consensus. Targeted support through volunteer co-ordination, capacity building, funding and jointly developed projects with schools, small businesses, parishes and local groups can accelerate efforts - making them more impactful and effective.

Potential targets for 2030 or beyond

Influence the average carbon footprint of up to 1.2M (100%) residents from 11.8 tCO₂e to below the national average of 10.7t^{cix}.

87 Parishes and other local areas to actively implementing climate, nature and resilience plans^{cx}.

513 (100%) schools implementing carbon management plan and travel plans^{cx} or working towards an EcoSchools certification^{cxii}.

Increased volunteers and community-led action, focused on places and people most in need^{cxiii}.

Higher participation in food waste recycling, and up to 380k diverted from residual (black bag) waste (32% reduction from 2023/4).

The wider benefit for Surrey

Residents acting in partnership with local government creates change in a way which makes most sense to communities. It allows people to improve their areas and support their communities. This creates an environment where people are more engaged in climate-friendly activities creating community ownership and cohesion^{cxiv}. It inspires individuals to reuse, buy less, enjoy local healthy food, take active travel and invest in renewable energy. These can reduce system-wide pressures and costs, including less waste and litter, less pressure on NHS and social care services, or bringing about local and smart energy supply.

2.5 GOAL 3 – IMPROVED HEALTH AND WELLBEING SERVICE DELIVERY –INTEGRATING CLIMATE AND HEALTH PRIORITIES

Why it matters

Reducing health impacts associated with high carbon use helps tackle health inequalities and reduces pressure on health and social services. Reducing the use of coal, oil and gas in homes and vehicles alleviates conditions linked to cold, damp, air pollution and the stress of high bills^{cxv}. Reducing consumption of high carbon foods such as meat and processed foods can result in lower levels of cardiovascular disease^{cxvi}, diabetes and bowel cancer^{cxvii}. Being more active, volunteering and being in nature improves mental health. Accounting for 4-5% of the UK's overall emissions, healthcare is also a significant source of carbon which if tackled, can lock-in bill savings for health services.

What local authorities can do

Better alignment between action on climate change and health and wellbeing can improve the collective understanding of the impact that climate change has on health inequalities. By raising awareness, improving the evidence base and initiating a climate in health delivery programme, response to threats can be improved, and new opportunities can be created to deliver the health co-benefits of climate action.

Potential targets for 2030 or beyond

Climate literacy and research for practitioners.

Environment Joint Strategic Needs Assessment.

Health and climate in all policies.

The wider benefit for Surrey

Mitigation, adaptation and decarbonisation measures could help to prevent the estimated 1,147 heat deaths in the UK (in 2025) where climate change was found to have contributed^{cxviii}. As a health co-benefit of decarbonisation, increased levels of physical activity through more active travel could help to reduce the estimated £1 billion cost of physical inactivity to the NHS in the UK each year^{cxix}. It will increase our preparedness for the change in pattern of transmissible diseases due to climate change.

2.6 GOAL 4 - NATURE-BASED SOLUTIONS – ENABLING CARBON SEQUESTRATION

Why it matters

Effective land management helps nature to manage the important cycles we all depend upon – including those that absorb carbon and mitigate the impacts of climate change. Plant growth and healthy soils take carbon emissions from the air and store it. Surrey's woodlands, wetlands and grasslands are most effective at this and help to absorb 4% of carbon emissions produced in Surrey. However, at the same time some land management practices produce potent greenhouse gases. The use of fertilisers, cattle production and farm machinery produce around 3% of the county's emissions^{cxx}.

What local authorities can do

Harnessing the carbon absorbing power of our national landscapes, parks, farms, verges and other public and private land can form part of our efforts to reverse biodiversity decline, reduce pollution and help with adaptation and resilience. It can be done through the management of protected areas, designing nature-based solutions into delivery of infrastructure and management of highways and public land. Strong partnerships, frameworks and tools can be developed to stimulate nature markets restore land and tackle pollution that improves the carbon absorption of land. This includes co-ordinating action to restore land and plant trees with communities.

Potential targets for 2030 or beyond

Habitat restoration and management which removes 56,000 tonnes of carbon^{cxxi}.

Plant 1.2M additional trees.

Less paving and more nature in urban areas.

The wider benefit for Surrey

Restoring and improving habitats, moving to regenerative land management practices and reducing pollution can protect and restore nature in Surrey, reduce flood risk^{cxxii}, clean up our waterways^{cxxiii}, and reverse biodiversity^{cxxiv cxxv} - all while improving health and supporting the local economy^{cxxvi}. De-paving and nature-friendly gardens combined with more trees that create shade which keep urban areas cool^{cxxvii}?, improving our access and enjoyment of nature^{cxxviii}.

2.7 GOAL 5 - SAFE, RESILIENT AND LOW CARBON BUILDINGS – THROUGH SUPPORTING ENERGY EFFICIENCY AND RENEWABLE ENERGY SUPPLY

Why it matters

Highly efficient and smart buildings fed by a local, low carbon and flexible energy supply makes Surrey attractive to residents and businesses seeking energy independence and low running costs. Electricity, gas and off gas heating fuel used in buildings makes up 39% of Surrey's direct carbon emissions; 27% from homes, 3% from public buildings and 9% from commercial buildings^{cxxix}. Many buildings have poor energy efficiency^{cxix}, contributing £1bn a year spent on home energy bills^{cxix} and our dependence on gas and oil heating making us exposed to volatile energy prices. During the energy crisis of 2022 fuel poverty rose to around 8% of households^{cxix}, and 66% of residents looked for ways to use less energy^{cxix}.

What local authorities can do

Playing a key role in energy planning using powers vested in a future Strategic Authority and supporting the delivery of stakeholder-led *Surrey Retrofit Strategic Action Plan 2025 to 2028*^{cxix} will tackle failures within the local retrofit market across the supply-chain to a point where the acceleration in uptake is self-sustaining. Actions include the delivery of a Local Area Energy Plan, grant funding to support for fuel poor homes, energy advice, group purchase schemes and support for community energy.

Potential targets for 2030 or beyond

Retrofit of 2,000 of the 41,800 fuel poor homes^{cxix}.

Support low carbon heating and renewables for up to 80,000 “heat pump ready” homes^{cxix}.

Over 25MW of solar PV on community buildings^{cxix}.

Up to 15,400 green jobs in heating, electricity generation and alternative fuels by 2050^{cxix}.

The wider benefit for Surrey

Improving efficiency, switching to low carbon heating and adding renewable energy could save residents, businesses and public sector up to £50m per year in bill savings^{cxix} eradicating fuel poverty and improving health impacts from warm homes. Stimulating the retrofit market could create thousands of new jobs and help us move towards energy independence.

2.8 GOAL 6 – AN INTEGRATED TRANSPORT SYSTEM – ENABLING LOW CARBON TRAVEL CHOICES

Why it matters

Making alternatives to oil-driven motor vehicles safer, more affordable and more accessible creates the conditions to reduce the 43% of emissions in Surrey that come from road traffic^{cxl}. Surrey's road network attracts traffic levels that are nearly double the national average^{cxli}, resulting in some parts of Surrey having the highest levels of air pollution in the Country^{cxlii} and causing losses to the economy from congestion^{cxliii}. Most of the traffic is cars, with around a fifth from vans and heavy goods vehicles^{cxliv}. Despite the health benefits of more active travel^{cxlv}, there has not been a meaningful increase in levels of walking, cycling and public transport use for many years^{cxlvi}. One in five residents drive every day, but many would consider alternatives^{cxlvii}. For public transport, access, frequency and fare prices were the greatest barriers, particularly in rural and low-income neighbourhoods. Safety is the number one issue that prevents more people from cycling^{cxlviii}.

What local authorities can do

Implementing local transport plans in line with climate goals means: working with partners to decarbonise buses, increase passengers and lower fares; providing integrated transport solutions to increase safety and ease of travel through cycling and bus lanes along priority routes and EV charging provision; and working with schools and communities on training and bike refurbishment.

Potential targets for 2030 or beyond

By 2050, convert 100% of the bus fleet (20% by 2030) and community transport (50% by 2030) with low carbon alternatives^{cxlix}.

Increase bus passenger numbers by 10% by 2030 and up to 300% by 2050^{cl}.

Initially, deliver over 20km improved cycle lanes, expanding to all priority routes by 2050^{cli}.

5,000 additional public EV charge points^{clii}.

The wider benefit for Surrey

An improved network making active and sustainable travel safe, pleasant and popular will reduce congestion, smell, noise and air pollution. Further, communities will be better connected. Finally, more active journeys will improve our health and wellbeing and reduce pressure on roads, lowering cost of health services and road maintenance.

2.9 GOAL 7 - A HIGH-VALUE ECONOMY – THAT SUPPORTS A LOW CARBON FUTURE

Why it matters

An economy that leads on climate and environmental solutions creates opportunities for investment and accelerates the transition to sustainability. In Surrey, consumption-related carbon impacts are significant: 3 Mt from construction, 1.3 Mt from food, and 2.7 Mt from other goods and services. These emissions largely arise outside the county from material extraction, land-use change, processing, and transport. Businesses in Surrey account for around 14% of direct energy and process emissions from offices, retail, and industrial buildings, while waste contributes 3% of emissions, about half of which comes from industry and business. A shortage of approximately 15,400 qualified professionals is forecast in areas such as low-carbon heating, electricity generation, and alternative fuels, and many SMEs need support to adopt new technologies, innovate, and implement sustainable growth plans.

What local authorities can do

Taking forward Surrey's economic strategy will ensure that Surrey continues supporting residents with skills development, for businesses to drive innovation and provide enabling infrastructure to unlock sustainable growth.

Potential targets for 2030 or beyond

Increased skilled local workforce able to meet future workforce needs.

Improved knowledge links to increase innovative clean-tech solutions.

Provision of low carbon energy, sustainable transport and digital infrastructure that enhances the performance of business.

The wider benefit for Surrey

Retaining the county's high-value and innovative regional economies championed in the future by a new Strategic Authority and underpinned by a skilled workforce means that Surrey-based businesses are well positioned to capture the opportunities of "Green Growth" expected to increase by an impressive 8% per year to 2030^{cliii}. This brings about the need for a skilled workforce in a wide range of services that operate directly (such as retrofit co-ordinators, sustainability consultancy) and indirectly (such as finance and sales) to ensure that businesses reduce their carbon and environmental impact and support the major shifts needed to realise climate and environmental protection in Surrey.

2.10 GOAL 8 – A CLIMATE POSITIVE AND EFFICIENT PUBLIC SECTOR

Why it matters

Public sector policies, services and spending power influence a large proportion of Surrey's emissions^{cliv}. Although public sector buildings only contribute to 3% of direct carbon emissions, their role in supporting the public, keeping people safe, improving places and education makes them uniquely placed to improve people's lives in a way which also cuts carbon. Many already recognise the strong links between climate change and the needs of residents – as well as the potential for low carbon investments to deliver on-going operational savings, such as reduced bills. Many have already committed to reduce their carbon emissions in line with national government expectations or faster^{clv, clvi clvii, clviii}. Despite high ambitions, they are sometimes limited by their powers to act, and the significant resources and skills needed to deliver change.

What local authorities can do

Surrey Local Authorities can become carbon neutral as organisations by investing in carbon reduction programmes for buildings, fleet and land management. Excellent provision of public services in line with climate and environment goals maximise co-benefits of climate action. Local Authorities can lead local and regional carbon emission reduction programmes with partners.

Potential targets for 2030 and beyond

Reduction of “direct” carbon emissions of up to 31kt^{clix}.

Reduction of “indirect” emissions currently estimated to be around 0.4Mt for procured services^{clx}.

Social housing decarbonisation for borough and district owned and managed homes.

Carbon offsetting of under 20% to benefit communities.

The wider benefit for Surrey

Ambitious climate change programmes deliver the Government's broader aims around carbon reduction and leverage significant public and private investment to stimulate economic growth. Making it easier for residents, businesses and community groups to lead safe, healthy and sustainable lives in turn reduces pressure on services. Investment in energy efficiency and renewables reduces running costs and enables effective and well-run services.

PART 3 MEASURING SUCCESS

3.1 INTRODUCTION

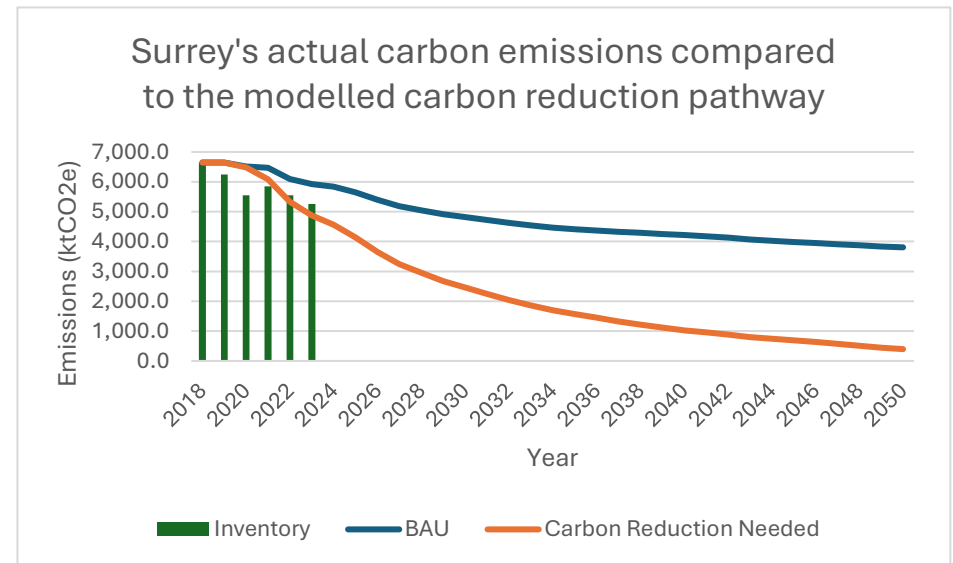
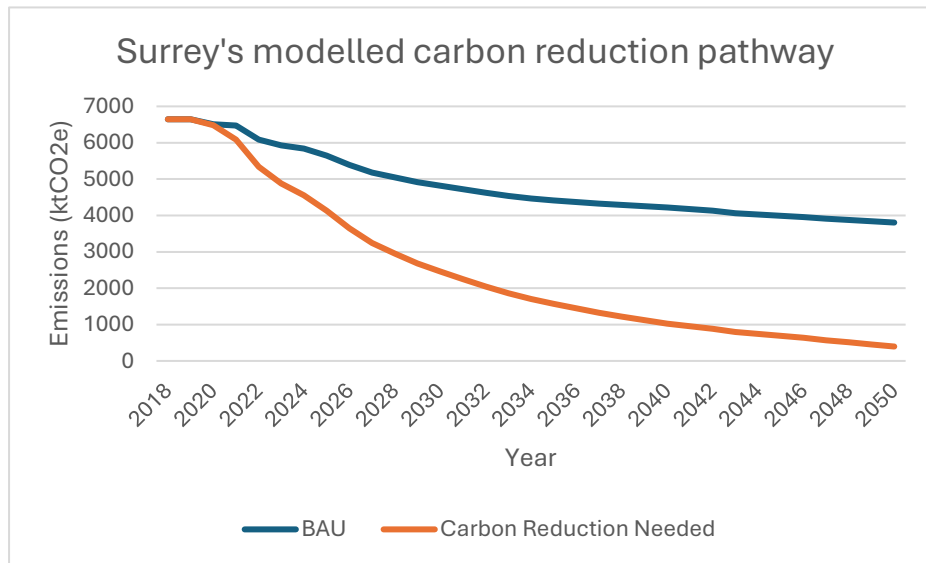
The information in this section shows how to use available data to accelerate decarbonisation projects in a cost-effective way and to the maximum benefit of residents and businesses in Surrey. It can also help form consensus and buy-in from partners and ensure transparency and accountability. It sets out the overarching monitoring and reporting framework that helps us to understand the changes that are being made towards tackling climate change and how these may be benefitting Surrey's residents, businesses and public sector. They seek to track:

- (1) The extent to which Surrey as a whole is contributing to carbon emission reduction;
- (2) Whether the underlying shifts that are needed to achieve the level of decarbonisation set out in the Climate Change Act are taking place; and
- (3) The impact of actions being undertaken by Local Authorities and key partners

More detail can be found in **Supplementary Document A** which sets out data sources for key metrics and indicators, and key information currently contained in Surrey's climate benefits calculator.

3.2 CARBON EMISSION REDUCTION

Surrey's 2050 carbon pathway has been created to compare carbon reduction in Surrey with national expectations^{clxi} and the 2050 net-zero target that was put in place by Local Authorities in 2019. Extrapolated from SCATTER^{clxii}, the model identifies the key changes that need to be made in transport, energy, land use, waste and agriculture between 2018 and 2050. This pathway is compared with actual progress taken from DESNZ UK local authority and regional greenhouse gas emission statistics^{clxiii}, published on an annual basis.



All Local Authorities in Surrey estimated the carbon emissions associated with their organisations using the nationally approved method^{clxiv}. Progress of carbon emission reductions were measured on an annual basis from the financial year 2019/20. If authorities wish to continue with 2030 net-zero targets, it is possible to use a 2019/20 baseline, adjusted to the footprint of the new Local Authorities. This allows savings already made to buildings and fleets to be accounted for and will support the development of carbon management plans.

3.3 SECTOR SPECIFIC INDICATORS

Carbon emission reduction across the county relies on key shifts in energy, transport, land use and the economy. Comparing trends of the following 17 indicators with the pace and scale of technology shifts (in section 1.4) that can inform future action.

Table 3: Proposed sector specific indicators

Goal	Surrey-wide indicators	Source
(1) Clean safe and green communities	Carbon emissions compared Carbon emissions by Local Authority area	Source 1 Source 1
(2) Vibrant communities	Consumption emissions Carbon emissions from waste Local Authority collected waste Proportion of waste recycled	Source 2 Source 1 Source 3 Source 3
(3) Preventative Health	Households likely to live in fuel poverty Households rated EPCD or below Walking and cycling frequency	Source 4 Source 5 Source 6
(4) Protection for nature and environment	Carbon emissions from agriculture and other land Air Quality Management Plans	Source 1 Source 7
(5) Safe, resilient and warm buildings	Carbon emissions from buildings Domestic energy consumption Non-domestic energy consumption Renewable energy capacity	Source 1 Source 8 Source 9 Source 10
(6) Transport for all	Carbon emissions from transport Total bus and rail passenger numbers Road miles EV vehicles Number of public charge points	Source 1 Local data source Source 12 Source 14 Source 15
(7) A sustainable economy	No indicator identified	-
(8) A climate positive public sector	Carbon emissions from public buildings Carbon emissions from Local Authorities	Local data source Local data source

3.4 MEASURABLE OUTPUTS AND BENEFITS FROM ACTION

The table below sets out the useful outputs that could be easily collected at a project level and be used to monitor progress, based on the implementation of the sample action plan from **Supplementary Document B**.

Table 4: Proposed measurable outputs

Goal	Measurable outputs	Unit
(1) Well designed places – fit for a low carbon future	Appropriate strategies and policies in place Funding leveraged for projects which support climate and environment goals	- £M per year
(2) Engaged communities – empowered to deliver climate action	Level of engagement through social media posts and web links Organisations supported through training, co-funding Social value or other funding leveraged for the benefit of communities Homes with food waste recycling Recycling rate/ Waste contamination rate	Link clicks Organisations £M per year % homes % waste
(3) Improved health and wellbeing service delivery–integrating climate and health priorities	Recipients of warm welcome services Practitioners trained in carbon literacy Reduction in carbon emissions/ progress for Surrey Heartlands green plan	Visitors Practitioners % carbon emission saving
(4) Nature-based solutions – enabling carbon sequestration	Delivery of nature conservation management plans Trees planted/ maintained Number of blue heart verges Investments made through nature recovery platform Area of BNG sites Grants which support environmental farming	- Trees Verges £M ha £M
(5) Safe, resilient, warm and low carbon buildings – through supporting energy	Fuel poor homes grant funded for home improvements Homes with retrofit assessments Homes signed up to group purchase schemes Number of rented homes targeted for energy efficiency engagement	Homes Homes Homes Homes

efficiency and renewable energy supply	Net-zero social housing Community energy/ Renewable energy schemes Recipients of green skills training	Homes MW renewable energy People
(6) An integrated transport system – enabling low carbon travel choices	Surrey Connect/ Community transport/ Bus service passenger numbers Low carbon buses Prioritised bus route Improved/ new cycle lanes Publicly available charge points Schools with travel plans Pupils trained in walking and cycling Bikes refurbished	Users % low carbon buses Km Km Charge point Schools Pupils per year Bikes
(7) A high-value economy – that supports a low carbon future	TBC	-
(8) A climate positive public sector	Progress towards net-zero target Energy efficiency streetlights Renewable energy installed Heat pumps installed Total energy consumption Low carbon fleet Buildings with EV and cycling infrastructure Net-zero new-buildings Offset contribution/ grant funding obtained Land under sustainable management Procurement spend under carbon reporting Business plans and services with carbon plan Staff with climate change training Sustainability network	% change % streetlights MW % total buildings kWh % total fleet % total buildings Buildings £M % land % contract spend % services % staff Membership

Benefits can be estimated using the tables below, depending on the nature of the project and the scale of output, using a set of assumptions that where possible is taken from actual Surrey-based projects. These assumptions can continue to be refined as we learn more about the relationship between the outcomes and benefits of individual projects.

Table 5: Summary of measurable benefits

Action	Annual Carbon savings in 2030 (tCO2e)	Annual Bill savings in 2030 (£)	Annual cost saving to NHS in 2030 (£)
Retrofit of one average Surrey Household (not including PV)	-	-	-
Retrofit (insulation only) of one average fuel poor household	0.38	124.84	3.37
One typical net-zero new build home	2.11	697.85	18.60
Solar PV one average Surrey Household	0.19	590.67	3.19
Solar PV one average fuel poor Surrey Household		-	-
One 1MW solar farm	40.62	124658.72	673.43
One EV car replaced by one petrol or diesel vehicle	1.82	-	12.40
One electric charge point installed	-	-	-
One 1km car journey replaced walk or cycle	0.00	0.09	0.00
1km cycle path created	-	-	-
1 diesel bus replaced with Low carbon alternative	36.55	-	-
One tonne of waste prevented	-	-	-
One schools under EcoSchools certification	0.35	678.15	3.94
One tree planted	-	-	-
One hectare of woodland restored from degraded grassland	-	-	-
One resident reducing their carbon footprint by 5%	-	-	-

PART 4 GOVERNANCE AND PARTICIPATION

4.1 INTRODUCTION

Engagement and governance gives people the information they need to act on climate change, helps build consensus and creates more opportunity for strong collaborations and impactful action. Based on some core principles of fairness, being evidence led and taking a preventive approach, this section sets out who needs to act, highlights existing partners and proposes that Local Authorities play a key role in the management and co-ordination of climate change work.

This is supported by **Supplementary Document B** which lists existing governance groups, partnerships and key stakeholders.

4.2 WHO NEEDS TO ACT

The best results come where individuals, community groups, businesses, public sector organisations and national government are thinking long-term and pulling in the same direction under the suggested collective mission of:

By 2050 we will have reduced the overall carbon emissions in Surrey to near zero, in ways that have improved lives, places and the environment.

And in line with the collective mission set out in Surrey's climate change adaptation strategy, which is:

By 2050 we will have resilient people, places and partnerships. adapted to 2°C of change and preparing for 4°C of change.

To achieve this co-ordinated approach:

National Government can provide the policy framework and funding to avoid unintended consequences.

Local Government can use policies and partnerships to stimulate local action by working hand-in-hand with communities.

Businesses can use their power and profits to provide the solutions needed for people to live sustainably.

Communities can take agency by improving their local areas and getting more involved in local decisions.

Schools and academia can educate, empower and innovate to be the partners for change.

Those who live, work and visit Surrey can choose local, healthy and low carbon ways to travel, eat and shop.

4.3 THE IMPORTANCE OF PARTNERSHIPS

Partnerships can bridge the gaps where no one single organisation has jurisdiction, skills or reach. These will make delivery faster, more widely accepted and more impactful. Here are some of the key regional and local partnerships that have already formed and are working towards our common goal:



Warm Welcome Services: is a group of organisations such as the Surrey Community Action and the Coalition of Disabled People, Surrey Fire and Rescue and Local Councils dedicated to providing warm spaces, winter warmth essentials and advice to support those who may be cold in winter.^{clxv}



Surrey Nature Partnership: co-ordinates the delivery of the Local Nature Recovery Strategy across protected areas, farms, landowners, urban areas and gardens.^{clxvi}



Surrey Climate Commission: is an independent, authoritative body that aims to support, influence and amplify community-led action to accelerate climate action and nature recovery across Surrey.^{clxvii}



Together for Surrey: led by the Sustainability Institute and Surrey County Council, brings voice to community leaders and supports high quality information to encourage residents to lead low carbon lifestyles.^{clxviii}



Surrey Environment Partnership: supports all Surrey Councils to eliminate avoidable waste by promoting recycling, recovery, and reuse, supporting a circular economy and decarbonisation.^{clxix}



Surrey Community Resilience Partnership: supports residents and businesses who are at risk or have been affected by extreme weather such as flooding, heatwaves and droughts, to reduce the future risks on those communities.^{clxx}



Business Surrey: is a Surrey-wide service providing free and accessible support for all businesses in Surrey.^{clxxi}



Surrey Heartlands/ Surrey & Sussex Integrated Care Board: is a partnership of organisations working together – with staff, patients, their carers, families and the public – to support people to live healthier lives.^{clxxii}



Active Surrey: enables people in Surrey who need it most, to enjoy healthy Active lives, by collaboratively tackling inequalities, and co-creating new, life-long positive attitudes and behaviours towards physical activity (including active travel), which enable better experiences and outcomes.^{clxxiii}



Home Energy Advice Team: (HEAT) is an in-person energy advice service, helping residents across Surrey take the first steps to improving energy use in their homes.^{clxxiv}



Surrey Community Energy: is a Community Benefit Society run by volunteers to develop, own and manage clean energy installations. Our goal is to increase energy independence for the county through the installation of renewable energy projects, providing lower cost power, creating jobs in innovative new areas, and contributing toward Surrey's climate change targets.^{clxxv}



Energy Action Redhill and Reigate: aims to benefit our community by promoting energy efficiency to help residents keep their homes warm and their bills low and to make local buildings more sustainable.^{clxxvi}



Zero Carbon Guildford: are key delivery partners in community-led projects that accelerate climate action, such as the Home Energy Advice Team, the sustainable business network and Surrey Community Energy.^{clxxvii}



Sustainable Epsom and Ewell: an environmental group with the objective of improving our borough's environmental performance.^{clxxviii}



Epsom and Ewell Climate Action Network: an enthusiastic group of volunteers who work locally to empower communities through inclusive projects that build resilience to the effect of Climate Change today and for the future.^{clxxix}



Talking tree: Working for a carbon neutral, nature rich, sustainable community. A community eco hub in Staines to help connect local people with climate solutions.^{clxxx}:



Dorking Climate Emergency: encourages involvement in Climate Action from residents of towns and villages throughout Surrey and beyond including Dorking, Guildford, Reigate, Redhill, Woking, Horley, Godalming, Farnham, Caterham, Oxted, Leatherhead, Weybridge, Egham, Staines and more.^{clxxxi}



Woking Environmental Action: is a volunteer-led organisation which promotes the conservation, protection and improvement of our physical and natural environment, in particular in Woking and the surrounding areas.

END

REFERENCES

ⁱ UK local authority and regional greenhouse gas emissions statistics, 2005 to 2023, DESNZ, 2025; <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-statistics-2005-to-2023>

ⁱⁱ SCATTER Emissions Reporting Tool for Local Authorities, Anthesis, 2025; <https://www.anthesisgroup.com/case-studies/scatter/>

ⁱⁱⁱ Local Authority Consumption Accounts, Place Based Climate Action Network, 2025; <https://localfootprint.uk/>

^{iv} Climate change delivery plan progress report 2024/25, Surrey County Council, 2025; (Pages 231-244) <https://mycouncil.surreycc.gov.uk/documents/g9701/Public%20reports%20pack%20Tuesday%2025-Nov-2025%2014.00%20Cabinet.pdf?T=10>

^v The Global Risks Report - 20th Edition, World Economic Forum, 2025; https://reports.weforum.org/docs/WEF_Global_Risks_Report_2025.pdf?_gl=1*j19kgp*_up*MQ..*_gs*MQ..&gclid=EAlaIqobChMlviHtwdajkAMVgZhQBh05ozHDEAAAYBCAAEgLFt_D_BwE

^{vi} The State of Surrey's Nature, Surrey Nature Partnership, 2017; <https://www.surreywildlifetrust.org/sites/default/files/2024-08/Waite%2C%20M.%20%282017%29.%20The%20State%20of%20Surrey%E2%80%99s%20Nature.%20pp.1%E2%80%9332.pdf>

^{vii} UK Climate Change Risk Assessment 2017: Evidence Report, Climate Change Committee, 2017; <https://www.theccc.org.uk/wp-content/uploads/2016/07/UK-CCRA-2017-Chapter-4-Infrastructure.pdf>

^{viii} Health Effects of Climate Change (HECC) report, HMG, 2023; <https://www.gov.uk/guidance/health-effects-of-climate-change-hecc-report>

^{ix} Climate change and the Stern Review: the implications for Treasury policy, House of Commons Treasury Committee, 2007; <https://publications.parliament.uk/pa/cm200708/cmselect/cmtreasy/231/231.pdf>

^x Summary of Stakeholder engagement for the Climate Change Strategy, Surrey County Council 2025, unpublished but available on request at greenerfutures@surreycc.gov.uk.

^{xi} Surrey's Climate Change Adaptation and Resilience Strategy, Surrey County Council, 2023; <https://www.surreycc.gov.uk/community/climate-change/what-are-we-doing/adaptation-and-resilience/adaptation-strategy>

^{xii} Local Nature Recovery Strategy, Surrey County Council, 2025; <https://surreynaturepartnership.org/local-nature-recovery-strategy-lnrs/>

^{xiii} Surrey's Economic growth strategy 2025-2035, Surrey County Council, 2025; <https://www.businesssurrey.co.uk/wp-content/uploads/2025/03/FINAL-SCC-Growth-Strategy-March-25.pdf>

^{xiv} Surrey Health and wellbeing strategy – update 2022, Surrey County Council, 2022; <https://www.healthysurrey.org.uk/about/strategy/surrey-health-and-well-being-strategy-update-2022>

^{xv} Climate Change Act 2008 (2019 amendment), HMG, 2019; <https://www.legislation.gov.uk/ukpga/2008/27/contents>

^{xvi} Paris Agreement; Nationally Determined Contributions, United Nations, 2015; <https://www.un.org/en/climatechange/all-about-ndcs>

^{xvii} Surrey's Climate Change Strategy, Surrey County Council, 2020; <https://www.surreycc.gov.uk/community/climate-change/what-are-we-doing/carbon-free/climate-change-strategy>

^{xviii} Climate change delivery plan progress report 2024/25, Surrey County Council, 2025; (Pages 231-244) <https://mycouncil.surreycc.gov.uk/documents/g9701/Public%20reports%20pack%20Tuesday%2025-Nov-2025%2014.00%20Cabinet.pdf?T=10>

^{xix} Greener futures climate change delivery plan 2021 to 2025, Surrey County Council, 2021; <https://www.surreycc.gov.uk/community/climate-change/what-are-we-doing/carbon-free/greener-futures-climate-change-delivery-plan-2021-to-2025>

^{xx} Elmbridge Borough Council: Carbon Management and Reduction Plan 2030; <https://www.elmbridge.gov.uk/sites/default/files/2024-12/Carbon%20Management%20and%20Reduction%20Plan%202030%20V2.pdf>
Epsom and Ewell Borough Council: Climate Change Action Plan 2025-2029; <https://www.epsom->

[ewell.gov.uk/sites/default/files/documents/residents/Climate%20Change%20Action%20Plan%202025-2029.pdf](https://www.guildford.gov.uk/sites/default/files/documents/residents/Climate%20Change%20Action%20Plan%202025-2029.pdf)

Guildford Borough Council: Climate Change Action Plan;

<https://www.guildford.gov.uk/article/27082/Our-climate-change-action-plan>

Mole Valley District Council: Mole Valley Climate Change Strategy, 2020;

<https://www.molevalley.gov.uk/wp-content/uploads/2024/02/Mole-Valley-District-Council-Climate-Change-Strategy.pdf> and The Climate Change

Action Plan 2024/5; <https://sustainablemolevalley.co.uk/what-we-are-doing/climate-change-action-plan/>

Reigate and Banstead Borough Council: Environmental Sustainability

Strategy Action Plan 2024; [https://www.reigate-](https://www.reigate-banstead.gov.uk/downloads/file/7370/environmental_sustainability_strategy_action_plan_2024)

[banstead.gov.uk/downloads/file/7370/environmental_sustainability_strategy_action_plan_2024](https://www.reigate-banstead.gov.uk/downloads/file/7370/environmental_sustainability_strategy_action_plan_2024)

Runnymede Borough Council: Runnymede Borough Council Climate Change Strategy 2022-2030;

[https://www.runnymede.gov.uk/downloads/file/1533/climate-change-](https://www.runnymede.gov.uk/downloads/file/1533/climate-change-strategy)

[strategy](https://www.runnymede.gov.uk/downloads/file/1533/climate-change-strategy) and Runnymede Climate Change and Nature Action Plan v1.1, 2025;

<https://www.runnymede.gov.uk/downloads/file/2294/runnymede-climate-change-action-plan-april-2025>

Surrey Heath Borough Council: Surrey Heath Borough Council Climate

Change Action Plan; [https://www.surreyheath.gov.uk/climate-change/how-](https://www.surreyheath.gov.uk/climate-change/how-council-tackling-climate-change/climate-change-action-plan)

[council-tackling-climate-change/climate-change-action-plan](https://www.surreyheath.gov.uk/climate-change/how-council-tackling-climate-change/climate-change-action-plan)

Tandridge District Council: Climate Change Strategy, 2025;

<https://www.tandridge.gov.uk/Portals/0/Documents/Your-council/Strategies-plans-policies/Climate-Change-Strategy-2050-September-2025.pdf?ver=qhJq7gE2wHMLEycluM51OQ%3d%3d>

Waverley Borough Council: Climate change strategy and action plan;

<https://www.waverley.gov.uk/services/environmental-concerns/sustainability-and-conservation/climate-change-strategy-and-action-plan>

Woking Borough Council: Climate Change Strategy;

<https://www.woking.gov.uk/your-council/strategies-policies-plans/climate-change-strategy>

^{xxi} Our progress on becoming a carbon free county, Surrey County Council, 2025; <https://www.surreycc.gov.uk/community/climate-change/what-are-we-doing/carbon-free>

^{xxii} English Devolution White Paper, HMG, 2024;

<https://www.gov.uk/government/publications/english-devolution-white-paper-power-and-partnership-foundations-for-growth/english-devolution-white-paper> and English Devolution and Community Empowerment Bill, HMG, 2025; <https://bills.parliament.uk/bills/4002> and Consultation outcome Proposals for local government reorganisation in Surrey, HMG, 2025; <https://www.gov.uk/government/consultations/local-government-reorganisation-in-surrey/proposals-for-local-government-reorganisation-in-surrey> and Proposals for local government reorganisation in Surrey: government response, 2025; <https://www.gov.uk/government/consultations/local-government-reorganisation-in-surrey/outcome/proposals-for-local-government-reorganisation-in-surrey-government-response>

^{xxiii} Summary of Stakeholder engagement for the Climate Change Strategy, Surrey County Council 2025, unpublished but available on request at greenerfutures@surreycc.gov.uk.

^{xxiv} Community vision for Surrey in 2030, Surrey County Council, 2024;

<https://www.surreycc.gov.uk/council-and-democracy/finance-and-performance/vision-strategy-and-performance/our-organisation-strategy/community-vision-for-surrey-in-2030>

^{xxv} As xiii

^{xxvi} As xiii

^{xxvii} The State of Surrey's Nature, Surrey Nature Partnership, 2017;

<https://www.surreywildlifetrust.org/sites/default/files/2024-08/Waite%2C%20M.%20%282017%29.%20The%20State%20of%20Surrey%E2%80%99s%20Nature.%20pp.1%E2%80%939332.pdf>

^{xxviii} As xiii

^{xxix} Our progress on becoming a carbon free county, 2025;

<https://www.surreycc.gov.uk/community/climate-change/what-are-we-doing/carbon-free>

^{xxx} The UK's plans and progress to reach net zero by 2050, HMG, 2025;

<https://commonslibrary.parliament.uk/research-briefings/cbp-9888/>

^{xxxi} Reaching net-zero will be much cheaper for the UK government than previously expected – and the economic damages of unmitigated climate change far more severe, Carbon brief, 2025;

<https://www.carbonbrief.org/obr-net-zero-is-much-cheaper-than-thought->

[for-uk-and-unchecked-global-warming-far-more-costly/#:~:text=Climate%20damages%20could%20reach%208,according%20to%20the%20OBR%20report](#)

^{xxxii} Local Authorities and the Sixth Carbon Budget, Climate Change Committee, 2020; <https://www.theccc.org.uk/publication/local-authorities-and-the-sixth-carbon-budget/>

^{xxxiii} Climate change delivery plan progress report 2024/25, Surrey County Council, 2025; (Pages 231-244) <https://mycouncil.surreycc.gov.uk/documents/g9701/Public%20reports%20pack%20Tuesday%2025-Nov-2025%2014.00%20Cabinet.pdf?T=10>

^{xxxiv} Climate Change Act 2008 (2019 amendment), HMG, 2019; <https://www.legislation.gov.uk/ukpga/2008/27/contents>

^{xxxv} The Paris agreement, United National Treaty Collection, 2015; https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXV-II-7-d&chapter=27&clang=en

^{xxxvi} English Devolution White Paper, HMG, 2024; <https://www.gov.uk/government/publications/english-devolution-white-paper-power-and-partnership-foundations-for-growth/english-devolution-white-paper>

^{xxxvii} English Devolution and Community Empowerment Bill, HMG, 2025; <https://bills.parliament.uk/bills/4002>

^{xxxviii} English Devolution and Community Empowerment Bill: Guidance, HMG, 2025; <https://www.gov.uk/government/publications/english-devolution-and-community-empowerment-bill-guidance/english-devolution-and-community-empowerment-bill-guidance>

^{xxxix} Warm Homes: Local Grant – guidance for local authorities, HMG, 2024; <https://www.gov.uk/government/publications/warm-homes-local-grant>

^{xl} Great British Energy founding statement, HMG, 2025; <https://www.gov.uk/government/publications/introducing-great-british-energy/great-british-energy-founding-statement>

^{xli} Heat network zoning, HMG, 2023; <https://www.gov.uk/government/collections/heat-network-zoning>

^{xlii} DESNZ Public Attitudes Tracker: Headline findings, Summer 2025, UK statistical release; <https://www.gov.uk/government/statistics/desnzs-public-attitudes-tracker-summer-2025/desnzs-public-attitudes-tracker-headline-findings-summer-2025-uk>

^{xliii} As xiii

^{xliv} As xiii

^{xlvi} As xiii

^{xlvi} As xiii

^{xlvi} As xiii

^{xlvi} As xiii

^{xlvi} As xiii

^{xlvi} As xiii

^{xlvi} UK local authority and regional greenhouse gas emissions statistics, 2005 to 2023, DESNZ, 2025; <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-statistics-2005-to-2023>

^l UK territorial greenhouse gas emissions statistics 1990-2003, HMG, 2025; <https://www.gov.uk/government/collections/uk-territorial-greenhouse-gas-emissions-statistics>

^{li} Local Authority Consumption Accounts, Place Based Climate Action Network, 2025; <https://localfootprint.uk/>

^{lii} SCATTER Emissions Reporting Tool for Local Authorities, Anthesis, 2025; <https://www.anthesisgroup.com/case-studies/scatter/>

^{liii} 2024 UK Greenhouse Gas Emissions, Provisional Figures, DESNZ, 2025; <https://assets.publishing.service.gov.uk/media/67e4060df356a2dc0e39b4cd/2024-provisional-greenhouse-gas-emissions-statistics-statistical-release.pdf>

^{liv} Climate change delivery plan progress report 2024/25, Surrey County Council, 2025; (Pages 231-244) <https://mycouncil.surreycc.gov.uk/documents/g9701/Public%20reports%20pack%20Tuesday%2025-Nov-2025%2014.00%20Cabinet.pdf?T=10>

^{lv} Climate change act 2008 (2019 amendment), HMG, 2019; <https://www.legislation.gov.uk/ukpga/2008/27/contents>

^{lvi} Net Zero – The UK’s contribution to stopping global warming, Climate Change Committee, 2019; <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

^{lvii} SCATTER Emissions Reporting Tool for Local Authorities, Anthesis, 2025; <https://www.anthesisgroup.com/case-studies/scatter/>

^{lviii} Net-Zero – The UK’s contribution to stopping global warming. Climate Change Committee, 2019; <https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf>

lix The power of the people – climate action and the role of citizens and communities, ARUP and C40 Cities, 2025; <https://takethejump.org/the-science>

lx Net Zero for Finance, University of Oxford, 2025; <https://netzeroclimate.org/sectors/finance/#:~:text=Increase%20sustainable%20investment%20standards,transition%20while%20still%20protecting%20profits.>

lxi AR6 Climate Change 2023, Synthesis Report, Summary for Policymakers, Intergovernmental Panel on Climate Change, 2023; https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf

lxii Surrey's climate change adaptation and resilience strategy, Surrey County Council, 2023; <https://www.surreycc.gov.uk/community/climate-change/what-are-we-doing/adaptation-and-resilience/adaptation-strategy>

lxiii Water stressed areas – 2021 classification, HMG; <https://www.gov.uk/government/publications/water-stressed-areas-2021-classification>

lxiv Surrey Climate Change Risk and Opportunities Assessment, JBA consulting for Surrey County Council, 2021; not published but available on request from greenerfutures@surreycc.gov.uk

lxv From risk to resilience: The case for flood-resilient communities, economy and growth, Public First, 2025; https://www.publicfirst.co.uk/wp-content/uploads/2025/03/From-risk-to-resilience-report_PF_180325.pdf

lxvi Health Effects of Climate Change in the UK: state of the evidence 2023, HMG, 2023; <https://assets.publishing.service.gov.uk/media/659ff6a93308d200131f78/HECC-report-2023-overview.pdf>

lxvii Building a Climate-Resilient Health System in the UK, UK Health Alliance on Climate Change, 2025; <https://s41874.pcdn.co/wp-content/uploads/Climate-Resilient-Health-System-Report-1.pdf>

lxviii 4th Health and climate adaptation report, NHS England, 2025; <https://www.england.nhs.uk/long-read/4th-health-and-climate-adaptation-report/>

lix Road traffic statistics, HMG, 2025; <https://roadtraffic.dft.gov.uk/regions>

lxx List of Local Authorities with AQMAs, Defra, 2025; <https://uk-air.defra.gov.uk/aqma/list>

lxxi As liv

lxxii Local highways maintenance transparency report, Surrey County Council 2025; <https://www.surreycc.gov.uk/roads-and-transport/roadworks-and-maintenance/roadworks/departments-for-transport-capital-funding/transparency-report#:~:text=The%20core%20objectives%20of%20highway%20maintenance%20are,other%20highway%20asset%20is%20allowed%20to%20degrade>

lxxiii As liv

lxxiv The State of Surrey's Nature, Surrey Nature Partnership, 2017; <https://www.surreywildlifetrust.org/sites/default/files/2024-08/Waite%2C%20M.%20%282017%29.%20The%20State%20of%20Surrey%E2%80%99s%20Nature.%20pp.1%E2%80%9332.pdf>

lxxv Yield Results – Harvest 2020, Strett & Parker, 2020,

https://rural.struttandparker.com/wp-content/uploads/2021/04/Yield-Results-Harvest-2020_compressed.pdf

lxxvi The Global Risks Report - 20th Edition, World Economic Forum, 2025; https://reports.weforum.org/docs/WEF_Global_Risks_Report_2025.pdf?_gl=1*jl9kgp*_up*MQ..*_gs*MQ..&gclid=EAlaIqObChMlVlHtwdajkAMVgZhQBh05ozHDEAAAYBCAAEgLFt_D_BwE

lxxvii Climate Change and Productivity: Exploring the Links, The Productivity Institute UK Research Institute, 2025; <https://www.productivity.ac.uk/research/climate-change-and-productivity-exploring-the-links/>

lxxviii As xiii

lxxix The UK's Modern Industrial Strategy 2025, HMG, 2025; <https://www.gov.uk/government/collections/the-uks-modern-industrial-strategy-2025>

lxxx Green skills demand in Surrey and North/Mid Hampshire - A report for Surrey County Council and Surrey Chambers of Commerce, WPI Economics and Lightcast consulting, 2023 – <https://www.surrey-chambers.co.uk/wp-content/uploads/2023/05/Green-skills-demand-in-Surrey-and-north.mid-Hampshire-002.pdf>

lxxxi As xiii

lxxxii As xiii

^{boxiii} Local Authorities and the Sixth Carbon Budget, Climate Change Committee, 2020; <https://www.theccc.org.uk/publication/local-authorities-and-the-sixth-carbon-budget/>

^{boxiv} Local decarbonisation opportunities and barriers: UK public procurement legislation, Katherine Sugar et al, 2022; https://www.researchgate.net/publication/365331169_Local_decarbonisation_opportunities_and_barriers_UK_public_procurement_legislation

^{boxv} Climate change delivery plan progress report 2024/25, Surrey County Council, 2025; (Pages 231-244) <https://mycouncil.surreycc.gov.uk/documents/g9701/Public%20reports%20pack%20Tuesday%2025-Nov-2025%2014.00%20Cabinet.pdf?T=10>

^{boxvi} Sustainable Fleet Management Strategy, Runnymede Borough Council, 2025; <https://www.runnymede.gov.uk/council-policy-1/sustainable-fleet-management-strategy>

^{boxvii} Sustainability Commercial Ask, Procurement Guidance, Reigate and Banstead, 2025; <https://www.reigate-banstead.gov.uk/info/20037/business/221/procurement/5>

^{boxviii} Supporting our suppliers' decarbonisation, Surrey County Council, 2025; <https://www.surreycc.gov.uk/community/climate-change/businesses/suppliers-decarbonisation#essentials>

^{boxix} Emerging Local Plan 2022-2040, Epsom and Ewell Borough Council, 2025; <https://www.epsom-ewell.gov.uk/regulation22>

^{xc} Healthy Homes 2025-2028 Waverley Borough Council Housing Strategy, 2025; <https://www.waverley.gov.uk/portals/0/documents/services/housing/housing-enabling/healthy-homes-2025-2028-waverley-borough-council-housing-strategy-v6.pdf>

^{xc1} Spelthorne's Eclipse Leisure Centre named Sport and Leisure Facility of the Year, Spelthorne Borough Council, 2025; <https://www.spelthorne.gov.uk/news/2025/spelthornes-eclipse-leisure-centre-named-sport-and-leisure-facility-year>

^{xcii} Heat Networks Demand, Woking Borough Council, 2025; <https://www.theade.co.uk/organisations/woking>

^{xciii} Showcase Success at the Sustainable Mole Valley Awards! – Latest news from Mole Valley District Council, 2025; [https://news.molevalley.gov.uk/2025/10/23/showcase-success-at-the-](https://news.molevalley.gov.uk/2025/10/23/showcase-success-at-the-sustainable-mole-valley-awards/#:~:text=On%20Thursday%2016%20October%202025,Fetcham%20Blue%20Hearts%20Wildflowers%20Verges)

[sustainable-mole-valley-awards/#:~:text=On%20Thursday%2016%20October%202025,Fetcham%20Blue%20Hearts%20Wildflowers%20Verges](https://news.molevalley.gov.uk/2025/10/23/showcase-success-at-the-sustainable-mole-valley-awards/#:~:text=On%20Thursday%2016%20October%202025,Fetcham%20Blue%20Hearts%20Wildflowers%20Verges)

^{xciv} Warm Homes Local Grant guidance for householders, Surrey County Council, 2025; <https://www.surreycc.gov.uk/community/climate-change/residents/home-energy/warm-homes-local-grant>

^{xcv} Warm Welcome Venues in Surrey, Surrey County Council, 2025; <https://www.surreycc.gov.uk/health-and-welfare/support/welfare-support/everyday-living/warm-welcome-venues>

^{xcvi} Climate change citizens' panel, Elmbridge Borough Council, 2025; <https://www.elmbridge.gov.uk/sustainable-elmbridge-0/climate-change-citizens-panel>

^{xcvii} How urban planning is key to net zero: evidence from London, Centre for Cities, 2021; <https://www.centreforcities.org/blog/how-urban-planning-is-key-to-net-zero/>

^{xcviii} Bristol City Leap, 2025; <https://www.bristolcityleap.co.uk/about/>

^{xcix} Plans to improve walking and cycling, Surrey County Council, 2025; <https://www.surreycc.gov.uk/roads-and-transport/sustainable/cycling-and-walking/plans>

^c National Planning Policy Framework, HMG, 2025; <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

^{ci} Taken from Surrey's carbon pathway derived from SCATTER and potential heat network opportunities identified.

^{cii} In line with the Waste Framework Directive 2025 revision, https://environment.ec.europa.eu/topics/waste-and-recycling/waste-framework-directive_en

^{ciii} Bristol City Leap, 2025; <https://www.bristolcityleap.co.uk/about/> and The Green Finance Fund, Greater London Authority, 2025; <https://www.london.gov.uk/programmes-strategies/environment-and-climate-change/climate-change/zero-carbon-london/london-climate-finance-facility/green-finance-fund>

^{civ} Equivalent to the total capital cost of household retrofit according to the Parity Project retrofit calculator, 2024, <https://parityprojects.com/>

^{cv} The Science – The Power of People, University of Leeds, Arup and c40-Cities, 2025;

<https://static1.squarespace.com/static/5f462d8d0b04df7da032a9bd/t/62252df0cc7bb27d653085a4/1646603770769/The+Power+of+People+-+The+JUMP.pdf>

^{cv} A toolkit for city regions and local authorities- Climate action co-benefits: Cutting carbon and improving people's lives, Ashden, 2018; <https://cobenefits-toolkit.ashden.org/>

^{cvii} Report: High Cost and Lack of Support are Key Barriers to More Healthy and Sustainable Living , Globe Scan, 2019; <https://globescan.com/2019/09/24/healthy-sustainable-living-report-2019/>

^{cviii} Councils for voluntary service (CVS) scorecards - 2020-21 Quarter 2 , Surrey County Council, 2021; <https://www.surreycc.gov.uk/community/voluntary-community-and-faith-sector/voluntary-service-performance-scorecards/councils-for-voluntary-service-scorecards-2021-quarter-2>

^{cix} Local Authority Consumption Accounts, Place Based Climate Action Network, 2025; <https://localfootprint.uk/>

^{cx} Climate nature and resilience toolkits for Parishes, Surrey County Council, 2025; unpublished but available on request at greenerfutures@surreycc.gov.uk.

^{cx} Modeshift Stars certification scheme, Modeshift, 2025; <https://modeshift.org.uk/modeshift-stars/>

^{cxii} Ecoschool certification scheme, Ecoschools, 2025; <https://www.eco-schools.org.uk/>

^{cxiii} The 21 Health and Wellbeing Key Neighbourhoods in Surrey, Surrey-I, 2025; <https://www.surreyi.gov.uk/key-neighbourhoods/>

^{cxiv} World Happiness Report 2025, Chapter 2, 2025; https://files.worldhappiness.report/WHR25_Ch02.pdf?_gl=1*1ow1tr3*_gcl_au*MTYzMzU1MDY1LjE3NjYyMjk5NDU

^{cxv} Health Effects of Climate Change (HECC) report, HMG, 2023; <https://www.gov.uk/guidance/health-effects-of-climate-change-hecc-report>

^{cxvi} Red and processed meat linked to increased risk of heart disease, Oxford University, 2021, <https://www.ox.ac.uk/news/2021-07-21-red-and-processed-meat-linked-increased-risk-heart-disease-oxford-study-shows>

^{cxvii} Carcinogenicity of consumption of red and processed meat, Bouvard et al, The Lancet, 2015;

[https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045\(15\)00444-1/abstract](https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(15)00444-1/abstract)

^{cxviii} Institute reports and analytical notes: Summer heat deaths in 854 European cities more than tripled due to climate change, Imperial Grantham Institute, 2025; ; <https://spiral.imperial.ac.uk/server/api/core/bitstreams/4d5b1a8a-c5ed-47fd-894c-f05ae31ae69d/content>

^{cxix} Physical Activity and the Environment, NICE guideline NG90, 2018; [Context | Physical activity and the environment | Guidance | NICE](https://www.nice.org.uk/guidance/ng90/context/physical-activity-and-the-environment)

^{cx} UK local authority and regional greenhouse gas emissions statistics, 2005 to 2023, DESNZ, 2025; <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-statistics-2005-to-2023>

^{cxxi} Assumptions taken from: SCATTER Emissions Reporting Tool for Local Authorities, Anthesis, 2025; <https://www.anthesisgroup.com/case-studies/scatter/>

^{cxixii} Use nature-based solutions to reduce flooding in your area, HMG, 2021; <https://www.gov.uk/guidance/use-nature-based-solutions-to-reduce-flooding-in-your-area>

^{cxixiii} EnviroAtlas Benefit Category: Clean Air, United States Environmental Protection Agency, 2025; <https://www.epa.gov/enviroatlas/enviroatlas-benefit-category-clean-air#:~:text=Ecosystems%20produce%20clean%20air,natural%20factors%20and%20human%20activities> .

^{cxixiv} Surrey's Climate Change Adaptation and Resilience Strategy, Surrey County Council, 2023; <https://www.surreycc.gov.uk/community/climate-change/what-are-we-doing/adaptation-and-resilience/adaptation-strategy>

^{cxixv} Local Nature Recovery Strategy, Surrey Nature Recovery, 2025; <https://surreynaturerecovery.commonplace.is/en-GB>

^{cxixvi} UK farmers lose £800m after heat and drought cause one of worst harvests on record, The Guardian, 2025; <https://www.theguardian.com/environment/2025/dec/04/record-heat-drought-2025-cost-uk-arable-farmers-estimated-800m-climate-crisis-grain-harvest>

^{cxixvii} How the urban heat island effect makes cities vulnerable to climate change, UK Green Building Council, 2022; <https://ukgbc.org/news/how-the-urban-heat-island-effect-makes-cities-vulnerable-to-climate-change/>

cxviii Evidence from stakeholder consultation for: Local Nature Recovery Strategy, Surrey Nature Recovery, 2025; <https://surreynaturerecovery.commonplace.is/en-GB>

cxix UK local authority and regional greenhouse gas emissions statistics, 2005 to 2023, DESNZ, 2025; <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-statistics-2005-to-2023>

cxix Evidence taken from: Parity Project retrofit calculator, 2024, <https://parityprojects.com/>

cxix Statistical Data Set - Annual domestic energy bills, HMG, 2025; <https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics>

cxix Fuel poverty statistics, HMG, 2025; <https://www.gov.uk/government/collections/fuel-poverty-statistics>

cxix Cabinet Report: delivering in partnership: towns - the next phase, Surrey County Council, 2023; <https://mycouncil.surreycc.gov.uk/documents/s91231/Cab%20280323%20Delivering%20in%20Partnership%20Towns.pdf>

cxix Surrey Retrofit Strategic Action Plan, 2025; unpublished but available on request at greenerfutures@surreycc.gov.uk.

cxix 2,000 homes is based on expected level of grant funding for Warm Homes. 41,800 is all fuel poor homes as of the data set published in 2025; <https://www.gov.uk/government/collections/fuel-poverty-statistics>

cxix Estimate of the number of off gas, with high energy efficiency and sufficient household in income. Surrey Retrofit Strategic Action Plan, 2025; unpublished but available on request at greenerfutures@surreycc.gov.uk.

cxix Based on potential project pipeline for Surrey Community Energy in 2025; <https://www.surreycommunityenergy.org/>

cxix Local green jobs – accelerating a sustainable economic recovery, Ecuity Consulting for the Local Government Association, 2026; <https://www.local.gov.uk/report-local-green-jobs-report>

cxix Based on 41k fuel poor homes, 80k heat pump ready homes and savings from 25MW of renewables from community energy using assumptions from the Surrey County Council climate benefits tool; unpublished but available on request at greenerfutures@surreycc.gov.uk.

cxl UK local authority and regional greenhouse gas emissions statistics, 2005 to 2023, DESNZ, 2025; <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-statistics-2005-to-2023>

cxli Road traffic statistics, HMG, 2025; <https://roadtraffic.dft.gov.uk/regions>

cxlii List of Local Authorities with Air Quality Management Areas, Defra, 2025; <https://uk-air.defra.gov.uk/aqma/list>

cxliii Local Transport Plan (LTP4), Surrey County Council, 2021; <https://www.surreycc.gov.uk/roads-and-transport/policies-plans-consultations/transport-plan> and Congestion Programme 2014, Surrey Future, https://www.guildford.gov.uk/newlocalplan/media/26643/GBC-LPSS-SD-064SurreyFutureCongestionProgramme2014SurreyCountyCouncil2014/pdf/GBC-LPSS-SD-064_Surrey_Future_Congestion_Programme_2014_#::~:~:text=Foreword,of%20the%20comments%20we%20received.

cxliiv Transport and environment statistics. HMG, 2021 <https://www.gov.uk/government/statistics/transport-and-environment-statistics-autumn-2021/transport-and-environment-statistics-autumn-2021#::~:~:text=Mileage%20and%20fuel%20use.>

cxliv Health benefits of pedestrian and cyclist commuting: evidence from the Scottish Longitudinal Study, BMJ Public Health, 2024; <https://bmjpublichealth.bmj.com/content/2/1/e001295>

cxlvi Walking and cycling statistics, HMG, 2025; <https://www.gov.uk/government/collections/walking-and-cycling-statistics> and passenger numbers gathered for reporting the Bus Service Improvement Plan.

cxlvii As xiii

cxlviii National Travel Attitudes Study (NTAS) Wave 9: Cycling, DfT, 2024; <https://www.gov.uk/government/statistics/national-travel-attitudes-study-wave-9/national-travel-attitudes-study-ntas-wave-9-cycling>

cxlix Based on current and potential progress to decarbonise Surrey's bus service, Surrey County Council 2025; <https://news.surreycc.gov.uk/2025/07/29/surreys-new-hydrogen-buses-make-up-the-uks-largest-zero-emission-hydrogen-bus-fleet/>

cl Lower estimate reflects ambitions under the current Bus Service Improvement Plan, 2024;

https://www.surreycc.gov.uk/_data/assets/pdf_file/0008/384074/Surrey-Bus-Service-Improvement-Plan-2024.pdf; higher estimates are taken from SCATTER assumptions; SCATTER Emissions Reporting Tool for Local Authorities, Anthesis, 2025; <https://www.anthesisgroup.com/case-studies/scatter/>

^{cli} Lower and upper estimate are taken from Local Cycling and Walking Infrastructure Plans; <https://www.surreycc.gov.uk/roads-and-transport/sustainable/cycling-and-walking/plans>

^{clii} Surrey electric vehicle public chargepoints progress and Preferred procurement option, Surrey County Council, 2022; <https://mycouncil.surreycc.gov.uk/documents/s83757/6.%20Surrey%20EV%20Public%20Chargepoint%20Network%20Update%20Select%20Committee%20Jan%202022%20v6.pdf>

^{cliii} Green skills demand in Surrey and North/Mid Hampshire, Lightcase and WPI Economics for Surrey County Council and Surrey Chambers of Commerce, 2023; <https://www.surrey-chambers.co.uk/wp-content/uploads/2023/05/Green-skills-demand-in-Surrey-and-north.mid-Hampshire-002.pdf>

^{cliv} Local Authorities and the Sixth Carbon Budget, Climate Change Committee, 2020; <https://www.theccc.org.uk/publication/local-authorities-and-the-sixth-carbon-budget/>

^{clv} Our Green Plan: Building a healthier, greener future, Surrey and Borders Partnership NHS Foundation Trust, 2025; <https://www.sabp.nhs.uk/aboutus/strategies-and-reports/our-green-plan>

^{clvi} Our Green Plan 2022, Surrey and Sussex Healthcare NHS Trust, 2022; https://www.surreyandsussex.nhs.uk/application/files/5016/4613/1315/SAS_H_Green_Plan_2022_FINAL.PDF

^{clvii} Surrey Police Carbon Management Plan, Surrey Policy, 2021; <https://www.surrey-pcc.gov.uk/wp-content/uploads/2021/03/05b-Surrey-Police-Carbon-management-plan-Final.pdf>

^{clviii} Sustainable energy on campus, University of Surrey, 2025; <https://www.surrey.ac.uk/sustainability/estates-and-operations/energy>

^{clix} Based on emissions from boroughs, districts and the County Council in Surrey as set out in: Climate change delivery plan progress report 2024/25, Surrey County Council, 2025; (Pages 231-244)

<https://mycouncil.surreycc.gov.uk/documents/g9701/Public%20reports%20pack%20Tuesday%2025-Nov-2025%2014.00%20Cabinet.pdf?T=10>

^{clx} Estimate of the carbon footprint of Surrey County Council's procured services in 2023 as set out in: Surrey County Council's Net Zero 2030 Progress Report 2022 – 2023, Surrey County Council, 2023; https://www.surreycc.gov.uk/_data/assets/pdf_file/0007/362761/2030-CLIMATE-CHANGE-ASSESSMENT-2022_Web-Version.pdf

^{clxi} Climate change act 2008 (2019 amendment), HMG, 2019; <https://www.legislation.gov.uk/ukpga/2008/27/contents>

^{clxii} SCATTER Emissions Reporting Tool for Local Authorities, Anthesis, 2025; <https://www.anthesisgroup.com/case-studies/scatter/>

^{clxiii} UK local authority and regional greenhouse gas emissions statistics, 2005 to 2023, DESNZ, 2025; <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-statistics-2005-to-2023>

^{clxiv} The Greenhouse Gas Protocol, 2025; <https://ghgprotocol.org/>

^{clxv} Warm Welcome Services, 2025; <https://www.surreycc.gov.uk/health-and-welfare/support/welfare-support/everyday-living/warm-welcome-venues>

^{clxvi} Surrey Nature Partnership, 2025; <https://surreynaturepartnership.org/>

^{clxvii} Surrey Climate Commission, 2025; <https://www.surreyclimate.org.uk/>

^{clxviii} Together for Surrey, 2025; <https://togetherforsurrey.org/>

^{clxix} Surrey Environment Partnership, 2025; <https://www.surreyep.org.uk/>

^{clxx} Surrey Community Resilience Partnership, 2025; <https://www.surreycc.gov.uk/community/emergency-planning-and-community-safety/emergency-planning/surreys-local-resilience-forum>

^{clxxi} Business Surrey, 2025; <https://www.businesssurrey.co.uk/>

^{clxxii} Surrey Heartlands/ Surrey & Sussex Integrated Care Board, 2025; <https://www.surreyheartlands.org/>

^{clxxiii} Active Surrey, 2025; <https://www.activesurrey.com/>

^{clxxiv} Home Energy Advice Team, 2025; <https://www.surreycc.gov.uk/community/climate-change/residents/home-energy/advice>

^{clxxv} Surrey Community Energy, 2025; <https://www.surreycommunityenergy.org/>

^{clxxvi} Energy Action Redhill and Reigate, 2025; <https://www.earr.co.uk/>

^{clxxvii} Zero Carbon Guildford, 2025; <https://www.zerocarbondguildford.org/>

^{clxxviii} Sustainable Epsom and Ewell, 2025;
<https://www.sustainableepsomewell.co.uk/>

^{clxxix} Epsom and Ewel Climate Action Network, 2025; <https://www.eecan.org/>

^{clxxx} Talking tree, 2025; <https://talkingtree.org.uk/>

^{clxxxi} Dorking Climate Emergency, 2025; <https://dorking-climate-emergency.net/about-dorking-climate-action/>