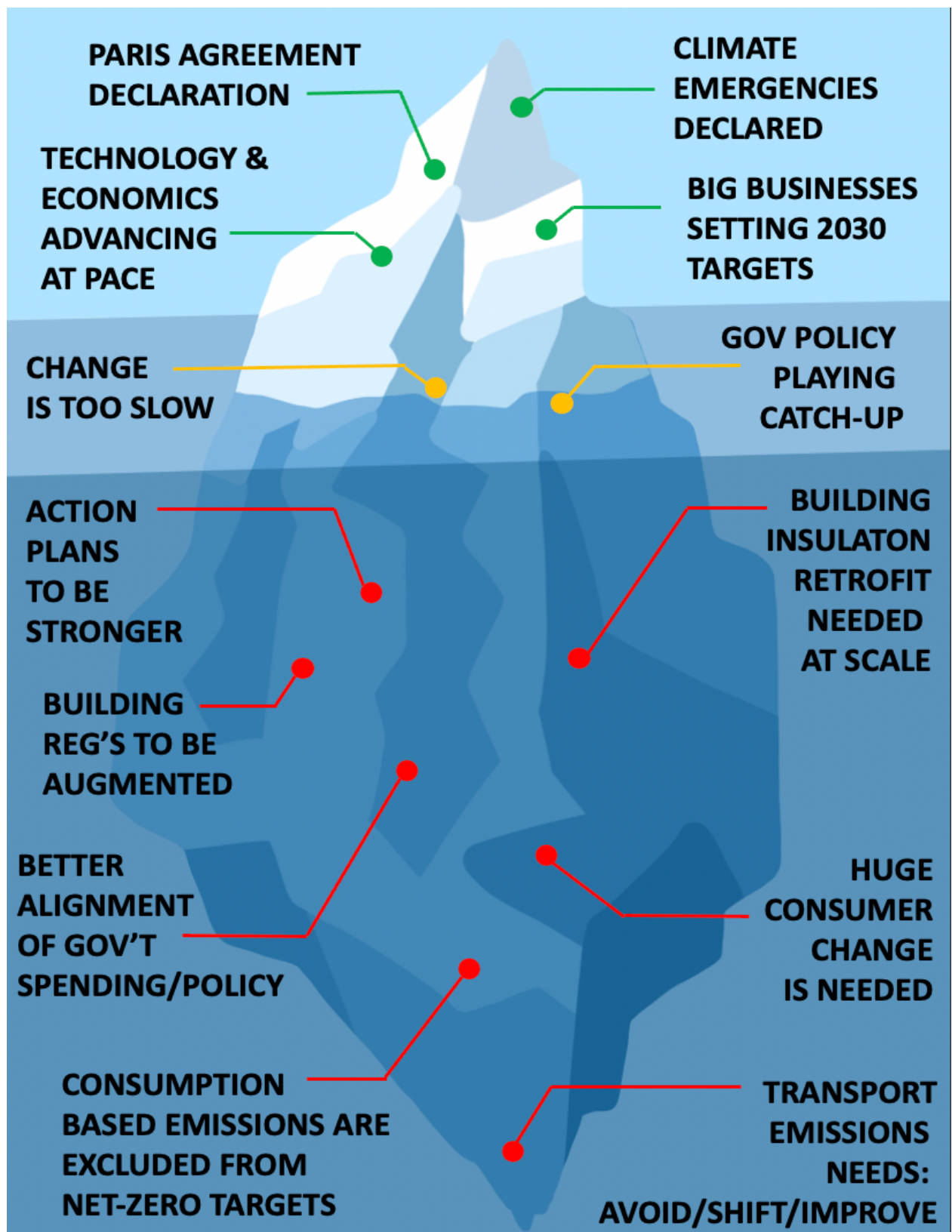


## Our Vision for Climate Action in Surrey



April 2021

**Front cover:**

The melting iceberg imagery is symbolic of the global challenge and race to save the climate and biodiversity.

Above the water line, which is visible, there appears to be good progress (green dots). But looking below the surface and progress is highly challenged and slow (amber dots). The red dots show the huge challenges that prevent the urgent actions needed.

Published by: Surrey Climate Commission

web: <https://www.surreyclimate.org.uk/>

contact: [info@surreyclimate.org.uk](mailto:info@surreyclimate.org.uk)

Version 4 (April 2021)

# Vision for Action in Surrey

## 1. Introduction

This document defines the focus and establishes the top-level actions that Surrey Climate Commission will seek to take in order to contribute towards delivery of significant direct and indirect greenhouse gas emissions reduction from Surrey residents, businesses and local government by 2030, putting the county on a clear trajectory to deliver net-zero well before the middle of the century.

It is our intention that this will support the ongoing efforts by Surrey County Council in the delivery of their Climate Change Strategy <sup>[13]</sup>. This contains an interim 2030 target of a 67% cut in emissions (below 2019 level) along the way to delivering net-zero by 2050. In addition, we will also go further by seeking to also address indirect, consumption-based, emissions.

Drawing heavily from the University of Surrey's Carbon Baseline Study <sup>[1]</sup> prepared for the Surrey Climate Commission the following priority areas of focus for the Commission have been identified:

- **Indirect (consumption based) emissions;**
- **Road vehicular transport (in particular cars);**
- **Domestic buildings (in particular heating energy);**
- **Large businesses and building clusters; and**
- **Infrastructure planning, policy alignment and financing.**

The first four areas are listed in the order of the scale and quantum of carbon emissions and together are responsible for over 80% of Surrey's total (direct and indirect) greenhouse gas emissions. At 60% of total greenhouse gas emissions the indirect consumption-based emissions are the single largest source, vehicle transport is responsible for 20%, domestic buildings for 13% and large businesses and building clusters for 5%. See appendix 2 for an infographic which summarises the University of Surrey's study results.

This study forms a baseline assessment, as at 2020, in order to track progress. It also forms the evidence basis for selecting the focus areas for the Surrey Climate Commission. See appendix 1 for the methodology.

The remainder of this paper outlines the top-level actions that the Surrey Climate Commission will focus on delivering and supporting. Further work will be undertaken to translate each action into a set of tangible timebound outputs.

## 2. Top-Level Actions

### ACTION CATEGORY 1 – INDIRECT (CONSUMPTION BASED) EMISSIONS

Indirect (consumption-based <sup>[4]</sup>) emissions are larger than Surrey's direct carbon emissions. These are emissions which take place outside the boundaries of Surrey but which the county is, at least partly, responsible for. For example, emissions that take place as a consequence of the food we consume, the clothes we wear, the materials used to build our homes, and the planning decisions taken. Consumption based emissions are often neglected and therefore not fully counted for in targets for 'Net Zero'. Where these emissions take place abroad it risks placing a greater burden on other, particularly developing countries, to reduce emissions for which they are not fully responsible for. If there is to be a just and fair global transition to net-zero transition therefore it is essential that we acknowledge and seek to address these emissions.

Our vision for action (VA1.1): Create a communications campaign using multiple channels to encourage **sustainable consumption**. eg. reusing, reducing consumption, buying local, buying sustainably, aviation minimization, car sharing and waste minimization.

Our vision for action (VA1.2): Create a **coalition of community groups** and alliances to push the messages around the need for a change to low carbon & ecologically less damaging consumption behaviours. Seek to open new channels to those often not engaged in the climate crisis debate for a 'Brighter Better Future'. (See appendix 4)

### ACTION CATEGORY 2 - ROAD VEHICULAR TRANSPORT (IN PARTICULAR CARS)

Transport changes must be prioritised according to the 'Avoid, Shift, Improve' framework: Avoid motorised travel in the first place; then Shift travel to walking, cycling, e-bikes and public transport; then Improve personal vehicular transport with the move towards electrification. Lifestyle and policy changes are needed such as more working from home, planning to allow localised living, encouragement and investment in sustainable and healthy modes such as walking and cycling, and public transport if long-distance travel is necessary. Evolving government policy will lead towards low carbon electric vehicles (EVs), however manufacturing emissions mean that they save only around 50% <sup>[10]</sup> of the CO<sub>2</sub> emissions of a diesel car even when charged with 100% renewable energy. Whilst significantly better than diesel and petrol, EVs alone are not the whole solution.

See section 5 which outlines the spatial planning and policy aspects needed to help enable this.

Our vision for action (VA2.1): **Understand the 'market'**, including who travels, how many, what mode, where & why. Recognise that transport is derived from other activities, such as work, shopping, housing locations, visiting friends and family, and leisure. Identify the changes that need to be made and promoted as enablers.

Our vision for action (VA2.2): Promote a **programme of transport changes**, based on the most effective means of closing the gap between how we currently travel and how we should travel in future to achieve the climate change target.

Our vision for action (VA2.3): Promote and **focus upon improving Air Quality**. Carbon impacts will inherently follow – people don't easily get Carbon and Climate Change but they do get Air Quality. Communicate the health and fun aspects & their impacts of transport.

Our vision for action (VA2.4): Lobby central government and local government for **less investment in new roads and more investment in sustainable travel** such as cycling, in broadband and local connectivity infrastructure to reduce the need for commuting and promoting shorter journeys with less impact, to encourage localised living.

### ACTION CATEGORY 3 - DOMESTIC BUILDINGS (IN PARTICULAR HEATING ENERGY)

#### Existing Buildings Energy Efficiency Retrofit

Around 80 to 85% of current domestic properties will still be standing in 2050. <sup>[11]</sup>

Therefore, improved low carbon/sustainable building standards and requirements for new build properties alone will not reduce emissions sufficiently drastically for this sector.

Our vision for action (VA3.1): Create a **street-by-street energy efficiency retrofit** replicator programme as a demonstration of what can be achieved. Do this in partnership with others.

The focus will include:

- Social housing (public sector lead);
- Private rented housing; and
- Owner occupied housing

See UK Green Building Council retrofit playbook for more information. <sup>[5]</sup>

#### New Buildings and Extensions

Local authorities administer planning permissions and building standards control. At present they generally require minimum sustainability standards as set out in central government building regulations, which are inadequate.

Our vision for action (VA3.2): Engage with and seek to influence local planning bodies in Surrey, so that they require more than **30% better than TER** (target emissions rate) than prescribed by UK Building Regulations. That they do not permit new connections to the natural gas network by end of 2022, as technical and economic solutions now exist in the form of air source heat pumps. This is an interim step towards zero carbon new homes.

Our vision for action (VA3.3): Engage with and seek to influence planning bodies so that **planning permission** given for extensions and loft conversions will require the existing

property fabric to be treated for significant thermal insulation and any new/additional heating source cannot be fossil fuel based.

#### Existing Buildings Refurbishment

Over £50bn was spent on refurbishing domestic properties in the UK in 2019 <sup>[12]</sup>. We need a larger proportion of this private investment to be spent on thermal insulation and heat recovery.

Our vision for action (VA3.4): Create a publicity and education campaign which targets property owners and encourages them to invest in thermal insulation, heat recovery, and low carbon heating, **when doing any refurbishment or building maintenance**. Doing this work at the same time as general refurbishment is often self-financing due to reduced lifetime operating cost.

General note: As more renewable sources of electricity are added to the grid and as coal fired power stations close, so the carbon intensity of UK electricity is rapidly falling. This has been driven by UK Government policy and more recently by falling costs of wind and solar technology. More small scale local renewable electricity generation will also contribute to this, but the main climate related issue in domestic buildings is the wastage of heat energy due to poor insulation and natural gas heating.

### **ACTION CATEGORY 4 - LARGE BUSINESSES & LARGE BUILDINGS CLUSTERS**

Surrey has over 14,000 businesses. However, just a few of those, with their headquarters/main facilities in Surrey, make up the majority of emissions in this sector (both direct and indirect). Key stakeholders are: Atkins, Berkeley Group, BAM Nutall, Gallaher Group, McLaren, Mouchel, Rentokil, SESWater, Spillers, Wilsons of Epsom, Surrey County Council (SCC), Borough & District Councils, University of Surrey, NHS, Thames Water, British Telecom, etc.

Our vision for action (VA4.1): Engage with and seek to influence the **top 30 highest emitting organisations** in Surrey and encourage them to declare and publish credible climate mitigation action plans by end of 2021 for the delivery of net zero carbon emissions from scope 1 and 2 by 2030 and of their key supply chain partners (scope 1 and 2). Continue to track and communicate their progress.  
Ultimately expand to 100 businesses and entitle **'Surrey 100'**

Our vision for action (VA4.2): Advocate for over 80% of public buildings and 60% of large businesses, with an appropriate roof, to have **solar PV installed** well before 2030. For buildings with a large daytime electricity demand SolarPV is a commercially viable business proposition. A significant proportion of this should be delivered by community led energy companies – so as to keep jobs and circular economics within Surrey (and neighbouring counties).

Our vision for action (VA4.3): Then extending the above action into **public buildings switching to low carbon heating**. Target 70% of public sector (schools, NHS, Police, Fire Service, Local Authorities).

Our vision for action (VA4.4): Engage with and influence the **top 30 property owners/landlords** in Surrey to join the Better Buildings Partnership (BBP) <sup>[9]</sup> and commit to proceed to implement their guidance/standards.

Note: Large emitters only make up a small proportion of the total business sector, the rest are hard to reach smaller companies. Therefore, we should seek to communicate campaign materials to support local business organisations and to consider the launch of the LOCASE grants programme (SCC) launching in Spring 2021.



## ACTION CATEGORY 5 - INFRASTRUCTURE PLANNING, POLICY ALIGNMENT & ECONOMY (ENABLER & BLOCKER)

The actions for climate change mitigation associated with transport, housing, business and consumption, require central government and local government enablement through more ambitious policies, and better policy alignment and financial certainty.

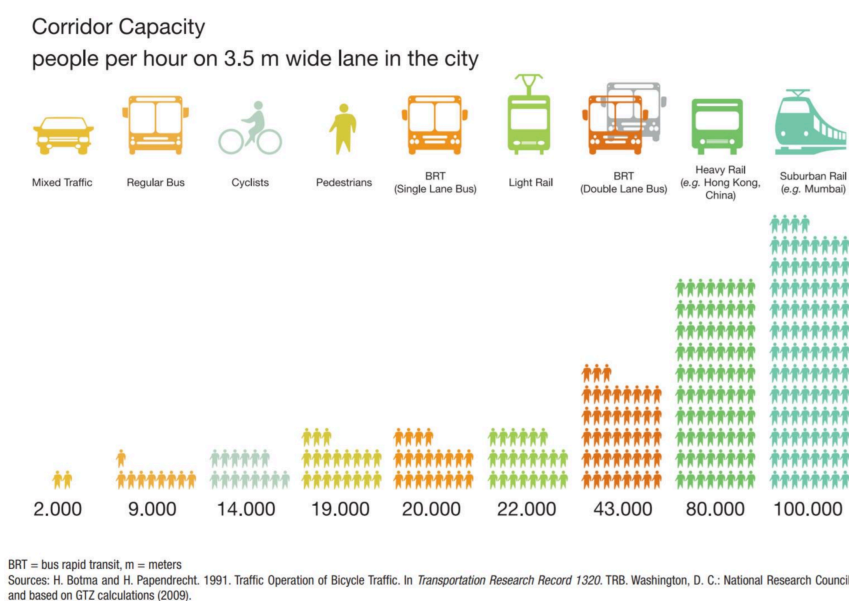
Our vision for action (VA5.1): Identify the appropriate policy levers that need to be improved, changed, or **better aligned** and the funding needed in order to be able to deliver ambitious emission reductions at the county level and prevent development which locks-in future emissions. Then advocate for these changes by the relevant level of government. Undertake this in coalition with other Climate Commissions and with the network of community alliances and professional groups.

Examples of the types of changes to local and national policy are given below:

### Transport

Changes in land use planning and working practices are required to reduce the need to travel, by encouraging self-contained communities where activities can be accessed by walking and cycling, and encouraging more home working. The proposed new roads investment should be diverted to sustainable projects such as provision for cycling and better high-speed communications broadband (fibre-to-the-property, not 5G), so that the need for commuting and business aviation is significantly reduced.

New road building investment and capacity building should be frozen, as this will simply increase embedded carbon and operational carbon as vehicles fill the capacity and lock-in additional carbon emission for many decades to come. The following illustration shows the inefficiency of roads for transportation <sup>[7]</sup> :





### **Aviation**

Expansion of aviation capacity in the UK should be frozen. The other actions of enhanced communications technology, more local procurement, and a changing culture of ways of living more sustainably will negate the need for more aviation capacity.

### **New proposed Oil and Gas extraction**

Planning permissions for fossil fuel extraction should not be granted in Surrey, as this will merely lock-in additional carbon emission for many decades to come. Clarity regarding the impact of net-zero targets on planning decisions must be provided to local authorities from National government via the planning system.

### **Investment in fossil fuel businesses**

Existing investments should be progressively withdrawn from fossil fuel businesses and operations, with a committed timetable published. There should be no new investments in fossil fuel based businesses. This includes investments via export credit guarantees, pension funds, long term government investments and loans.

### **House building**

Spatial planning policy in local authority 'Local Plans' should require all new housing to be built better than 30% above Target emission rate (TER) of UK building regulation <sup>[6]</sup> from 2021 through to 2025. After 2025 the requirement should be net zero emissions. This should also apply to commercial and industrial business properties from 2028.

### **Central and local government procurement**

Central and local government, including NHS, fire rescue and policing, should reset their procurement and supply chain agreements to purchase sustainable products and services only. Requiring them to be net zero emissions by 2030 (with a publicly published 10 year plan through to 2030). Their tier 1 supply chain partners should be required to do the same.

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### 3. Action Difficulty vs Climate Benefit vs Cost Assessment

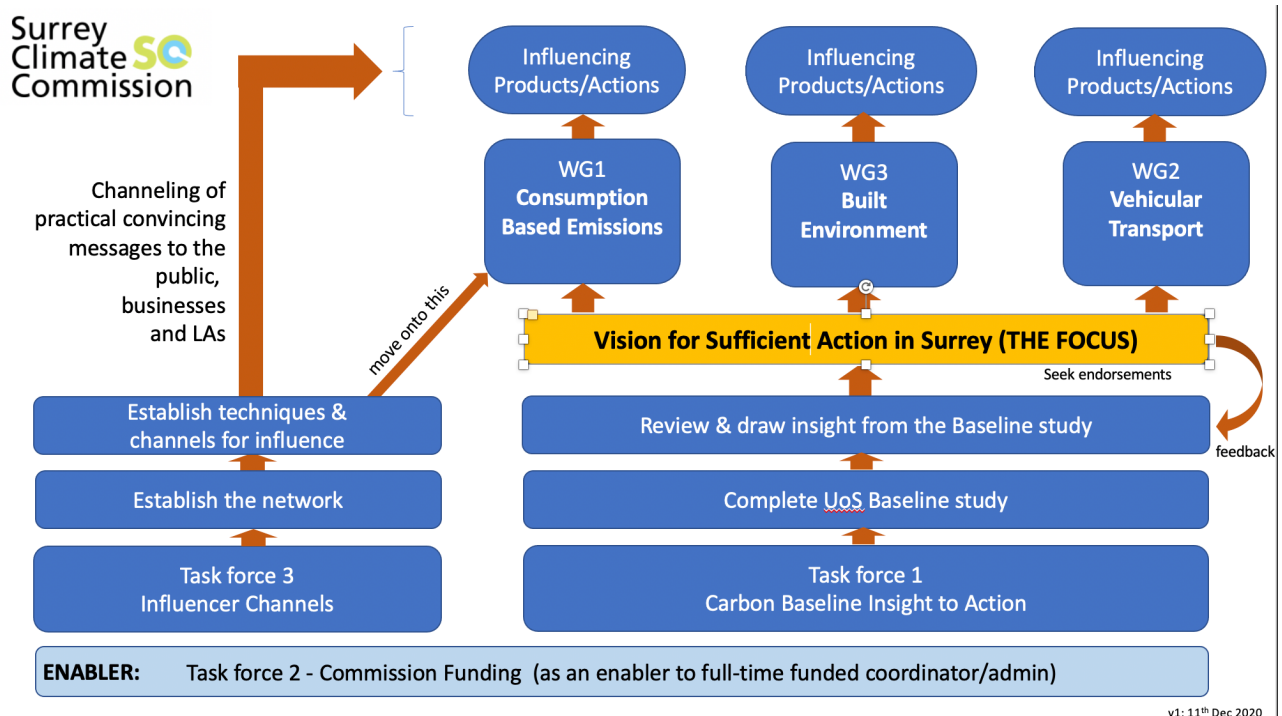
The vision for action items are summarised as follows. This is an indicative assessment.

Category	Action	Description	Difficulty	Benefit	Cost	Audience
Consumption	VA1.1	Communications campaign	High	High	Med	Public at large
Consumption	VA1.2	Coalition of community groups	Low	Medium	Low	Community groups
Transport	VA2.1	The travel market / a derived activity	Low	Enabler	Low	LA
Transport	VA2.2	Transport changes	High	High	High	Public and LA
Transport	VA2.3	Air quality focus	High	High	Med	Public and LA
Transport	VA2.4	Lobbying for investment	High	High	Low	LA / UK Gov
Buildings	VA3.2	Higher planning standards (new)	Medium	High	Low	LA Planners/exec
Buildings	VA3.4	Higher planning standards (refurb/ext)	Medium	High	Low	LA Planners/exec
Buildings	VA3.3	Insulation campaign	High	High	Low	Public at large
Buildings	VA3.1	Street-by-street retrofit replicator	Very High	High	High	Housing Assoc etc
Buildings	VA4.4	Better Buildings	Medium	Medium	Low	Owners/landlords
Business	VA4.1	Top 30 business declare net zero 2030	Medium	High	Low	Top 30 businesses
Business	VA4.2	Solar PV on public buildings etc + heat pumps	High	High	Low	LA and businesses
Business	VA4.3	Low carbon heating for public buildings	Medium	Medium	Med	LA, NHS, etc
Planning	VA5.1	Integrated policy planning	High	High	Low	LA Execs

*'Cost' and 'Difficulty' columns are related to cost and difficulty for SyCCom to action/influence.  
LA means: County Council and District/Borough councils.*

## Appendix 1 - Framework for Commission Insight into Action

This framework illustrates how foundations within the Surrey Climate Commission will flow through from insight into action. Read from base upwards.



The top 5 action categories will be taken forward as follows:

- Action Category 1 and 4 will be led by the Engagement Working Group (WG1) with support from WG3.
- Action Category 2 will be led by the Vehicular Transport Working Group (WG2).
- Action Category 3 will be led by the Built Environment Working Group (WG3).
- Action Category 5 will be led by Core Group.

### Methodology for the creation of this 'Vision for Action' document

- Assimilate the University of Surrey carbon baseline study results (based upon final draft document)
- Create simple 1-page infographic to clearly illustrate sector and category magnitudes; to see the size of the problem
- Define a problem statement
- Mini-workshop to establish a starting position
- Creation of draft version-0 document including prioritised 'visions of action'
- Review with a group of 7 members of Surrey Climate Commission, including those with technical backgrounds in: engagement, energy, transport, and buildings.
- Iteration of versions following by overall review. Including source referencing.
- Publish version 2 for discussion and feedback from Surrey Climate Commission steering group. Noting this is an evolving document. And version changes will be clearly recorded.
- Update and publish in public domain on Surrey Climate Commission website and share.

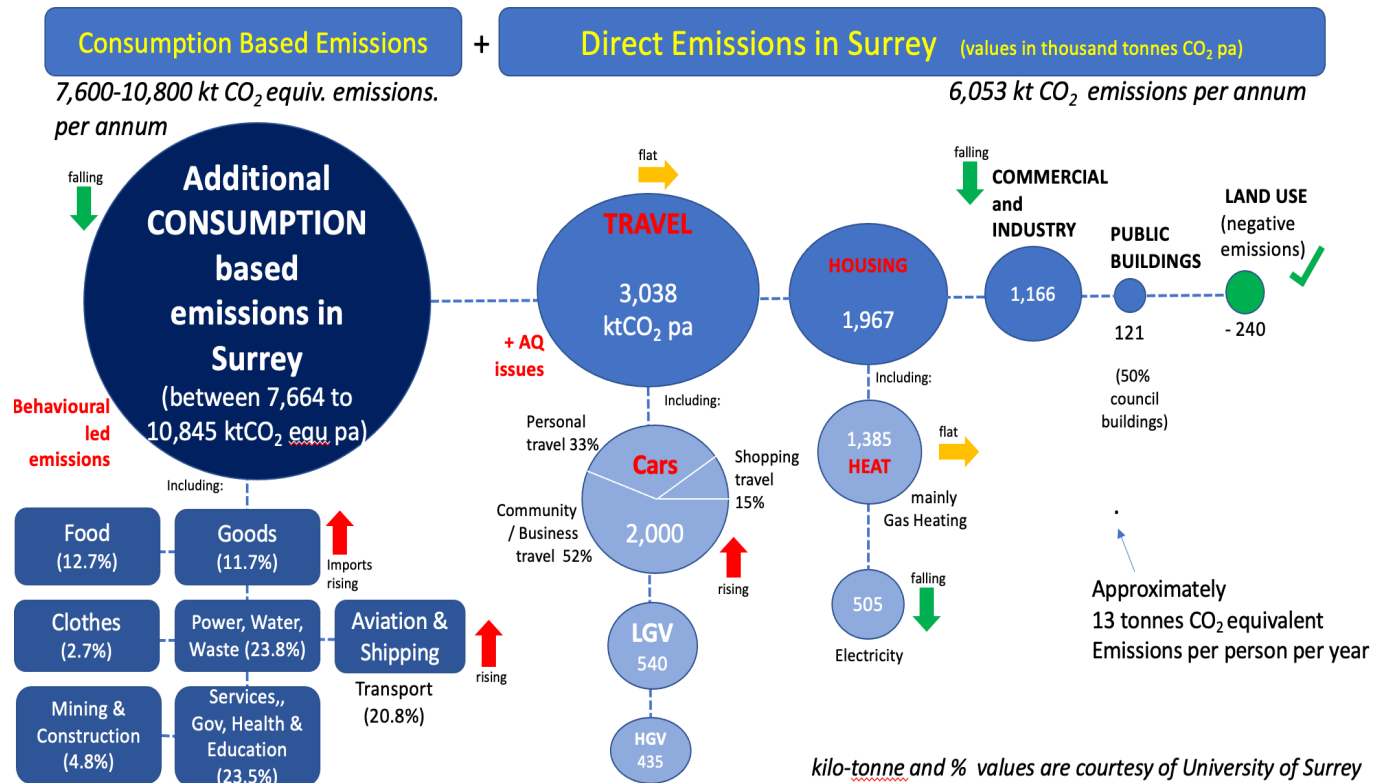
## Appendix 2 – Surrey Carbon Baseline Study Infographic Summary

This is a visual summary of the Surrey Carbon baseline study results for 2020:

### Infographic for Carbon Emissions in the County of Surrey, UK

version-3  
6<sup>th</sup> March 2021

Surrey  
Climate  
Commission



The methodology can be re-run each year to see the impact actions are having within Surrey.

## Appendix 3 – Central and Regional Government Policy

Evolving UK Government policy will lead to significant carbon reduction in the following areas. Surrey Climate Commission will not focus on areas that are already covered by clear or developing policy that is already being enacted/actioned.

Category	Policy	Reference
Transport Electrification	Electric vehicles	( <a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/932122/decarbonising-transport-setting-the-challenge.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/932122/decarbonising-transport-setting-the-challenge.pdf</a> to be published Spring 2021, DfT)
Grid carbon	Additional offshore wind turbines	<a href="https://www.gov.uk/government/publications/offshore-wind-sector-deal/offshore-wind-sector-deal#executive-summary">https://www.gov.uk/government/publications/offshore-wind-sector-deal/offshore-wind-sector-deal#executive-summary</a> March 2020
Grid efficiency	Smart meters and the enablement of smart grid	<a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/285417/Smart_Grid_Vision_and_RoutemapFINAL.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/285417/Smart_Grid_Vision_and_RoutemapFINAL.pdf</a> 2014
Low carbon grid	Expansion of low carbon nuclear energy	<a href="https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future/energy-white-paper-powering-our-net-zero-future-accessible-html-version#chapter-2-power">https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future/energy-white-paper-powering-our-net-zero-future-accessible-html-version#chapter-2-power</a> – updated Dec 2020
Grid carbon	Closure of coal fired power plants	<a href="https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future/energy-white-paper-powering-our-net-zero-future-accessible-html-version#chapter-2-power">https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future/energy-white-paper-powering-our-net-zero-future-accessible-html-version#chapter-2-power</a> – updated Dec 2020
Grid carbon	Expansion of HVDC offshore grid connections to low carbon sources	<a href="https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future/energy-white-paper-powering-our-net-zero-future-accessible-html-version#chapter-2-power">https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future/energy-white-paper-powering-our-net-zero-future-accessible-html-version#chapter-2-power</a> – updated Dec 2020
Transport fuels	Green hydrogen/ Green ammonia energy carrier enablement (will take decades to scale-up)	<a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/910382/Business_models_for_low_carbon_hydrogen_production.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/910382/Business_models_for_low_carbon_hydrogen_production.pdf</a> , BEIS, 2020
Buildings	Renewable Heat Incentive (RHI)	<a href="https://www.gov.uk/government/publications/changes-to-the-renewable-heat-incentive-rhi-schemes">https://www.gov.uk/government/publications/changes-to-the-renewable-heat-incentive-rhi-schemes</a> (Domestic and Non-Domestic Nov/Dec 2020)
Buildings	London Energy Transformation Initiative	Good archetype examples in LETI Climate Emergency Design Guide ( <a href="https://b80d7a04-1c28-45e2-b904-e0715cf93.filesusr.com/ugd/252d09_3b0f2acf2bb24c019f5ed9173fc5d9f4.pdf">https://b80d7a04-1c28-45e2-b904-e0715cf93.filesusr.com/ugd/252d09_3b0f2acf2bb24c019f5ed9173fc5d9f4.pdf</a> )

This section will be updated as policy certainty increases.

## Appendix 4 – Surrey Community Groups for Climate Action

In no particular order. Last updated: 28<sup>th</sup> Nov 2020.

Foodfloat Community Interest Company: <https://foodfloat.org>  
 Transition Dorking: [www.transitioninitiative.org/initiative/dorking](http://www.transitioninitiative.org/initiative/dorking)  
 Dorking Community Hub In Pippbrook: [www.community-hub-in-pippbrook.org.uk](http://www.community-hub-in-pippbrook.org.uk)  
 Dorking Community Orchard: [www.dorkingcommunityorchard.org](http://www.dorkingcommunityorchard.org)  
 Dorking Solar Group: [www.dorkingsolargroup.org](http://www.dorkingsolargroup.org)  
 Dorking Repair Café: <https://facebook.com/dorkingrepaircafe>  
 DorkingSoS: [www.dorkingsos.org.uk](http://www.dorkingsos.org.uk)  
 Dorking Climate Emergency: <https://dorking-climate-emergency.net/>  
 Dorking Trees4Life: [julian.everett@gmail.com](mailto:julian.everett@gmail.com)  
 Gatwick expansion campaign: [www.cagne.org](http://www.cagne.org)  
 Leith Hill Oil drilling campaign: [www.leithhillnodrill.com](http://www.leithhillnodrill.com)  
 Weald Action Group: [www.wealdactiongroup.org.uk](http://www.wealdactiongroup.org.uk)  
 Horse Hill Frack-off: [www.frack-off.org.uk](http://www.frack-off.org.uk)  
 Surrey Climate Commission: <https://www.surreyclimate.org.uk/>  
 Action Energy Surrey: [www.thamesweygroup.co.uk/action-surrey](http://www.thamesweygroup.co.uk/action-surrey)  
 Energy4All: [www.energy4all.co.uk](http://www.energy4all.co.uk)  
 Solar Schools Surrey: [www.veyvalleysolar.co.uk](http://www.veyvalleysolar.co.uk)  
 Dorking energy storage: <https://www.sondesplacefarm.com/>  
 Surrey County Council- what are they doing for climate action: <https://www.surreycc.gov.uk/people-and-community/climate-change>  
 XRGuildford: <https://www.xrguildford.org/act-now>  
 XRDorking: <https://xrdorking.org/>  
 XRWoking: <https://rebellion.global/groups/gb-woking/>  
 XRFarnham: <https://xrfarnham.org/>  
 Dorking Community Fridge: <https://dorkingcommunityfridge.co.uk/>  
 Dorking Foodbank: <https://dorkingcommunityfridge.co.uk/>  
 SouthEast Energy Hub: <https://www.energyhub.org.uk/>  
 University of Surrey Climate Research: <https://www.surrey.ac.uk/environmental-regulatory-research-group/research/climate-change>  
 Mole Valley District Council – what are they doing for Climate Action: <https://www.molevalley.gov.uk/home/community/climate-change-sustainability/how-were-tackling-climate-change>  
 South East Climate Alliance: [www.seclimatealliance.uk](http://www.seclimatealliance.uk)  
 Transition Bookham: <http://www.transitionbookham.org.uk/>  
 Transition Haslemere: <http://transitionhaslemere.org/>  
 Transition Farnham: <https://transitionfarnham.wordpress.com/>  
 MoleValleyCyclingForum: <https://mvcf.org.uk/>  
 Surrey Environment Forum: <https://www.surreyep.org.uk/>  
 Surrey Energy and Environment Partnership: <https://www.surreycc.gov.uk/people-and-community/climate-change/what-are-we-doing/partnership>  
 Take Climate Action in your area (FoE led): <https://takeclimateaction.uk/>  
 Surrey Energy Partnership: contact Catriona Reeby.  
 Holy Trinity Westcott Ecoschools: <https://ecochurch.arochoa.org.uk/holy-trinity-westcott/>  
 Ecoschools: <https://www.eco-schools.org.uk/>  
 Surrey Wildlife Trust: <https://www.surreywildlifetrust.org/>  
 Campaign for Protection of Rural England (Surrey): <https://www.cpresurrey.org.uk/>  
 Greenpeace (Surrey): <https://greenwire.greenpeace.org.uk/s/group/0F94H000000CHg2SAG/surrey-greenpeace>  
 XR Reigate & Redhill: <https://xrreigateandredhill.org/>

Woking Climate Action Plan (a more progressive council):

<https://www.woking.gov.uk/nature-and-sustainability/climate-change/climate-emergency-action-plan>

WeAct Environment Action: <https://www.facebook.com/weactla21/>

World Wildlife Fund (WWF) Woking Surrey: <https://www.wwf.org.uk/get-involved/living-planet-centre/whats-on>

Declare a Climate Emergency: <https://www.climateemergency.uk/blog/list-of-councils/>

Centre for Sustainable Energy: <https://www.cse.org.uk/>

Carbon Disclosure Project: <https://www.cdp.net/en>

Possible- Inspiring Climate Action: <https://www.wearepossible.org/>

FoE Climate Action Redhill & Reigate: <https://takeclimateaction.uk/group/climate-action-redhill-reigate>

FoE Climate Action Cranleigh towards carbon neutral: <https://takeclimateaction.uk/group/cranleigh-climate-action-group-towards-carbon-neutral>

FoE Climate Action Elmbridge: <https://takeclimateaction.uk/group/elmbridge-friends-earth>

Greening Godalming: <http://www.gefweb.org.uk/Greening%20Godalming%20flyer.pdf>

Surrey Reuse Network: <https://surreyreusenetwork.org.uk/>

Surreys Green Future: <https://surreysgreenerfuture.uk/>



## Appendix 5 – Reference Material

Ref	Reference material description
1	Surrey Carbon baseline Study. By Centre for Environment & Sustainability, University of Surrey. Erica Russell, Ian Christie, Richard Murphy. November 2020. Prepared by University of Surrey for the Surrey Climate Commission. Note the midpoint value for consumption based emissions is used in any percentages in this document.
2	Local green jobs – accelerating a sustainable economic recovery. An Ecuity Consulting report for the Local Government Association (LGA)
3	A green stimulus for housing; The macroeconomic impacts of a UK whole home retrofit programme. New Economics Foundation.
4	WWF Carbon Footprint Analysis. Consumption based emissions. March 2020. <a href="https://www.wwf.org.uk/sites/default/files/2020-04/FINAL-WWF-UK%20Carbon%20Footprint%20Analysis%20Report%20March%202020%20%28003%29.pdf">https://www.wwf.org.uk/sites/default/files/2020-04/FINAL-WWF-UK Carbon Footprint Analysis Report March 2020%20%28003%29.pdf</a>
5	UKGBC Retrofit playbook. Oct 2020. <a href="https://www.ukgbc.org/ukgbc-work/driving-retrofit-of-existing-homes/">https://www.ukgbc.org/ukgbc-work/driving-retrofit-of-existing-homes/</a>
6	UKGBC Policy Playbook for Local Authorities. March 2020. <a href="https://www.ukgbc.org/wp-content/uploads/2020/03/The-Policy-Playbook-v.1.5-March-2020.pdf">https://www.ukgbc.org/wp-content/uploads/2020/03/The-Policy-Playbook-v.1.5-March-2020.pdf</a>
7	Transport Corridor Capacity. Changing course in Urban Transport. ADB. 2011
8	How the EU can achieve net zero emission at net zero cost, McKinsey, Dec 2020. <a href="https://www.weforum.org/agenda/2020/12/european-union-achieve-net-zero-emissions-2030/?utm_medium=40digest.intl.carousel&amp;utm_source=email&amp;utm_content=&amp;utm_campaign=campaign">https://www.weforum.org/agenda/2020/12/european-union-achieve-net-zero-emissions-2030/?utm_medium=40digest.intl.carousel&amp;utm_source=email&amp;utm_content=&amp;utm_campaign=campaign</a>
9	Better Buildings Partnership. <a href="https://www.betterbuildingspartnership.co.uk/">https://www.betterbuildingspartnership.co.uk/</a>
10	Embedded carbon of electric vehicles. Report by International Council on Clean Transportation. <a href="https://theicct.org/sites/default/files/publications/EV-life-cycle-GHG_ICCT-Briefing_09022018_vF.pdf">https://theicct.org/sites/default/files/publications/EV-life-cycle-GHG ICCT-Briefing_09022018_vF.pdf</a>
11	Refresh rate of new buildings. <a href="https://www.ukgbc.org/climate-change/#:~:text=The%20built%20environment%20contributes%20around,the%20UK's%20total%20carbon%20footprint.&amp;text=Newly%20constructed%20buildings%20are%20more,is%20decarbonising%20our%20existing%20stock">https://www.ukgbc.org/climate-change/#:~:text=The%20built%20environment%20contributes%20around,the%20UK's%20total%20carbon%20footprint.&amp;text=Newly%20constructed%20buildings%20are%20more,is%20decarbonising%20our%20existing%20stock</a>
12	Expenditure on domestic property refurbishment. <a href="https://www.money.co.uk/guides/renovation-nation">https://www.money.co.uk/guides/renovation-nation</a>
13	Surrey County Council (2020), Surrey's Climate Change Strategy, <a href="https://www.surreycc.gov.uk/_data/assets/pdf_file/0003/225615/Surreys-Climate-Change-Strategy-2020.pdf">https://www.surreycc.gov.uk/_data/assets/pdf_file/0003/225615/Surreys-Climate-Change-Strategy-2020.pdf</a>
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## Appendix 6 – Revision Control

Revision	Description	By	Dated
0	Initial creation	P. Street	10 <sup>th</sup> Dec 2020
1	First draft for discussion	P. Street with J. Essex input	19 <sup>th</sup> Dec 2020
2	Second draft for circulation to Surrey Climate Commission Steering Group	P. Street consolidation of comments from Erica Russell, Chris Hyde, Kirsty Clough, Pat Smith, Graham Smith, Richard Essex, Jonathan Essex.	6 <sup>th</sup> Mar 2021
3	Edit	Kirsty Clough	5 <sup>th</sup> April 2021
4	Final version to publish	Paul Street	15 <sup>th</sup> April 2021
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