Extracts from Vision:

Climate

is stabilised through decarbonising, and we are resilient to change

- Greenhouse gas emissions are reduced to net zero in all areas - energy and buildings, transport, land use, etc
- Nature-based solutions are deployed at scale
- Adaptation is active for nature, infrastructure and the economy and society

"We are the first generation to feel the effect of climate change and the last generation who can do something about it."

Barack Obama, Former US President, 2015

Subsections in this 'Climate' section of the Plan:

Reducing greenhouse gas emissions – pathway to net zero, in all sectors

Carbon storage and sequestration in land and soil

Adaptation, including risk assessment and reporting

Renewable energy

Attitudes and behaviour change

Just transition

*Key link to other Plan themes - **Nature-based solutions***

Climate Change has become a central issue for protected landscapes as the urgency of the climate crisis has ramped up. 2024 was the hottest year on record and records continue to be broken. As shown below, the sharp increase in global atmospheric CO2 levels within the lifespan of the Shropshire Hills AONB due to fossil fuel use is greater than the range of natural fluctuations over the previous 800,000 years. Globally, emissions are still rising.

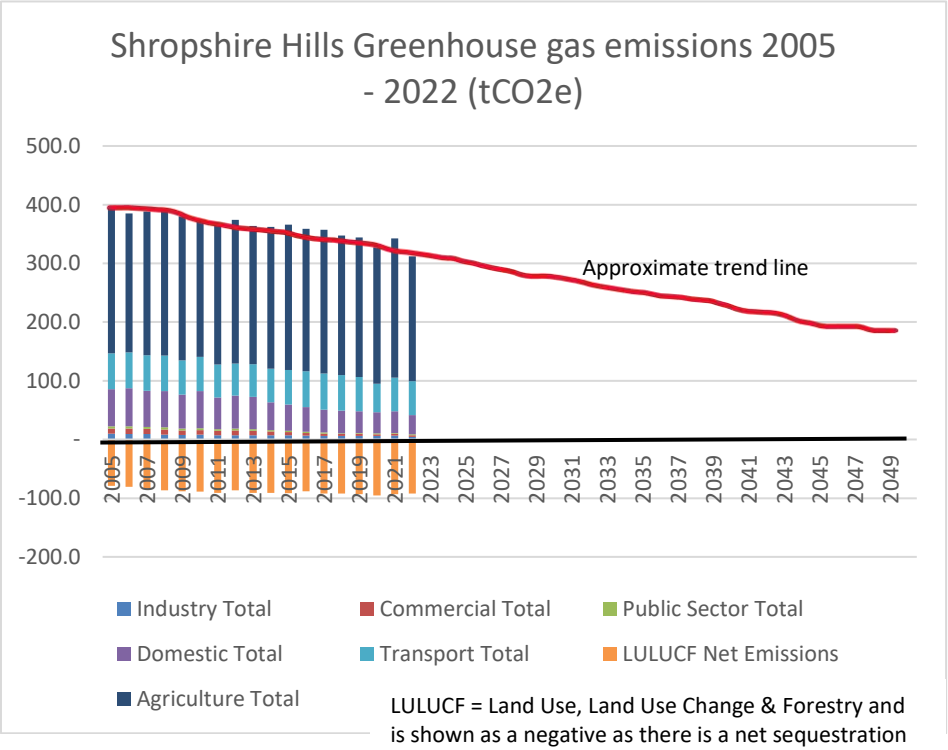
The relatively stable period of climate through the Holocene era which has enabled humans to thrive is coming to an end unless we act faster. As in other topics of this Plan, there is a lot of good activity locally, but not at sufficient scale and pace, and too many factors and activities are still pushing the wrong way. This plan covers the second half of the decade to 2030, a period critical to achieving the Paris Agreement target of holding global heating to 1.5 degrees above pre-industrial levels, and to avoid levels of climate change which threaten the future of humanity.

Global commitments of Protected Areas are set out in the Protected and Conserved Areas Joint Statement.

The national statement of commitment from AONB Chairs on Climate Action of April 2022 states that *"[National Landscape] teams and partnerships must now more than ever confirm their leading role and ambition in addressing this challenge."* The Chairs pledged to *"Empower our partnerships to explore their full potential in terms of climate action: what they can deliver directly and what they can influence."*

Reducing greenhouse gas emissions – a pathway to net zero, in all sectors

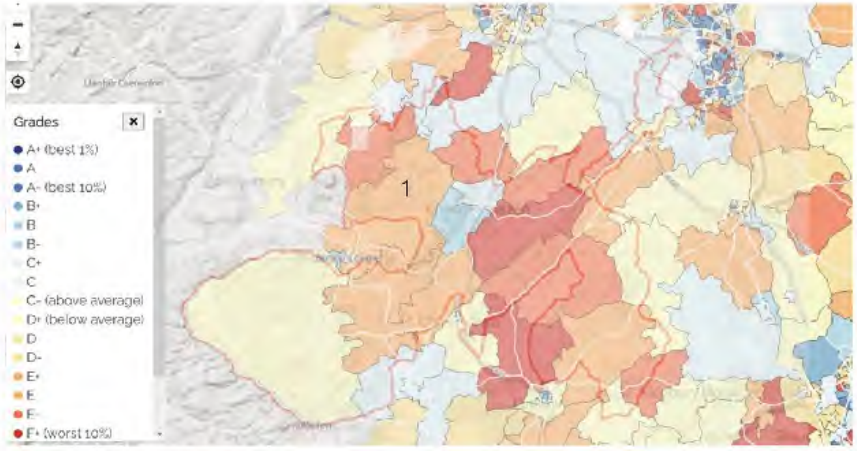
The government data for greenhouse gas emissions (which exclude consumption-based emissions and so are not a complete picture) show a noticeable reduction over the last 20 years, as below. However the rate of reduction is only about half what is required to reach net zero by 2050.



LULUCF = Land Use, Land Use Change & Forestry and is shown as a negative as there is a net sequestration rather than emission.

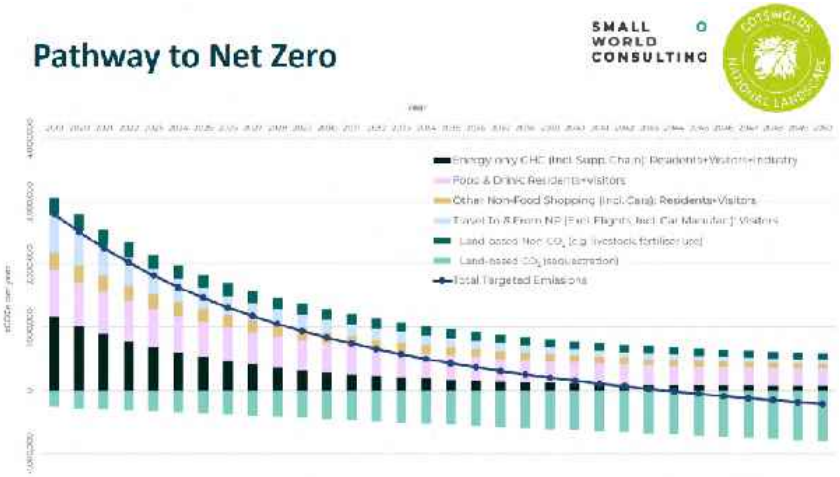
Evidence shows that per capita emissions in the Shropshire Hills are higher than the national average. This is partly a consequence of the rural nature of the area leading to higher emissions from domestic energy and transport, but is also linked to high levels of consumption.

Carbon emissions by super-output area in the Shropshire Hills



Red shows highest emissions through yellow to blue showing lowest emissions

We need to promote an 'emissions descent' through energy transition and action in all sectors, as here from the Cotswolds:

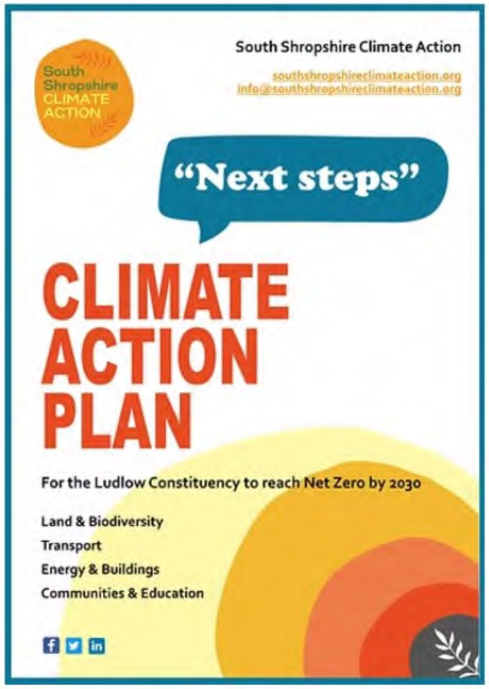


Case study – South Shropshire Climate Action Plan

South Shropshire Climate Action produced in 2021 the 'Next Steps' Climate Action Plan for the Ludlow constituency to reach Net Zero by 2030. This was accompanied by two major local conferences which generated a lot of engagement, and was a big achievement for a community group

The Plan makes recommendations across headings of Land and Biodiversity, Energy and Buildings, Transport, Communities and Education. The group has now merged into the county level group of Shropshire Climate Action.

"In telling the truth about the Climate Emergency, we acknowledge that the future is uncertain, difficult and dangerous, but also full of opportunity and hope. In our choices we can improve life, creating an inclusive and fair society for all, sharing resources equally and respecting differences."



The National Landscapes Association collaborative work on climate change identified priorities in relation to five headings. These form the basis of this Plan's approach.

Agriculture - Overall goal: Reduce greenhouse gas emissions from farming (including CO2, methane and N2O) while continuing to produce healthy and nutritious food, improving long and short-term food security and enabling nature recovery.

Greenhouse gas emissions from land and farming need to be reduced while continuing to produce food. We need farming systems which improve soil condition and integrate with nature (such as regenerative/ agro-ecological), plus changes to the food system and diets.

Sustainable transport and tourism - Overall goal: Reduce greenhouse gas emissions from transport and tourism, continuing to meet people's needs but challenging hypermobile trends of travel and reducing demand, at the same time improving health and wellbeing.

We need to adapt tourism infrastructure and influence visitor behaviours, connect people better to nature, support active travel, and access for all.

Buildings and energy efficiency - Overall goal: Reduce greenhouse gas emissions from domestic and commercial buildings, new and existing.

We need better resilience and sustainability in new buildings, retrofit for large numbers of older existing houses, and to take account of landscape sensitivity.

The content for renewable energy and nature-based solutions is included within the headings later in this section.

Carbon storage and sequestration in land and soil

The National Association worked with Cranfield University in 2022 and gained a lot of knowledge of carbon in land in our landscapes:

- A variety of habitats and land cover types within National Landscapes are valuable carbon stores with good potential for carbon sequestration
- Soil carbon stock (carbon per ha) is generally higher in priority habitats than non-priority habitats
- Peat soils have the highest soil carbon stocks
- The bulk of carbon is stored within the soil rather than biomass
- Emissions are associated mainly with arable land (and peatlands which are not wet enough)
    - The first priorities are about holding on to important carbon stores and reducing/stopping emissions from land.

Types of land which are important because they are carbon-rich:

- Extensive areas of high organic content soil in upland grassland
- Woodlands – strongly sequestering
- Peatlands (not well represented by the habitat/ land use classes used) - hold big C store for their size (related to depth), but lots are emitting

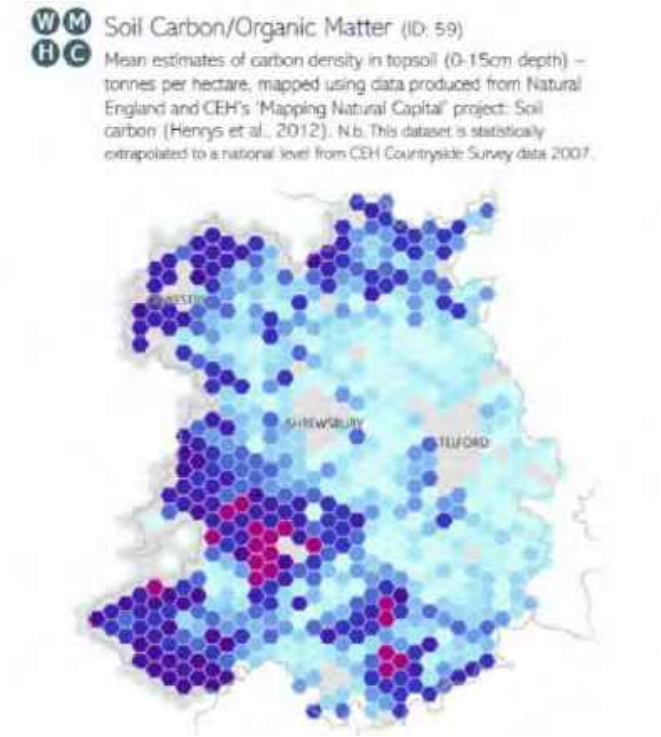
Shallow peat soils in the headwaters of the Clun catchment

Types of land which are important because large areas are present:

- Big carbon stores in arable land but these are generally emitting
- Big carbon stores in grassland but these are generally holding it or emitting very slowly

What to do to optimise carbon storage and sequestration in land and soil:

- Expand woodland cover in ways sympathetic to nature and landscape
- Support agricultural practices which raise soil organic carbon in grassland
- Reduce carbon loss in arable land by moving to min/no till
- Increase cover of trees outside woods and grow hedges to larger volume
- Rewet peat areas to reduce/ stop emissions
- Protect heathland and manage sensitively
- Stabilise the large areas of high organic content soil by reducing intensity of land management



The soils of the Shropshire Hills are significantly high in carbon/organic matter in the context of the county (Natural England)

(pale blue lowest through dark blue then red to highest)

Adaptation, including risk assessment and reporting

Projections indicate that global heating will result in warmer wetter winters, hotter summers, and more extreme weather events e.g. heat waves, torrential downpours of rain, extreme wind and storm events. These changes in climate are likely to create significant impacts which will affect all aspects of the economy, society, infrastructure and the natural environment. Climate change is of course global, and the indirect effects of climate change in other parts of the world will affect the economy and geopolitics. These indirect influences are likely to prove to be more significant for the Shropshire Hills than direct effects.

National Landscapes have been invited to contribute collectively to the current round of Government reporting in the National Adaptation Programme. We will be expected to do this individually for each National Landscape in the next round.

During the consultation phase further work on risk assessment and adaptation will be undertaken to include in the final plan.

Themes for adaptation:

Landscape
Natural Environment
Historic Environment
Farming, Forestry and Land Management
Built Environment
Community and Economy
Recreation and Tourism

Renewable energy

Previous Management Plans have since 2009 championed the necessary shift to low carbon and supported approaches to renewable energy which are compatible with the special qualities and other key characteristics of the Shropshire Hills. Approaches are also favoured transition to more decentralised zero carbon energy systems that empower and benefit local communities, with broader sustainability benefits.

Wind generation has been effectively prevented by national and Local Plan policy over recent years, since it had to be supported by Neighbourhood Plans which are so limited in coverage. There is also no policy to guide planning applications for wind microgeneration in the National Landscape. It could be argued that the lack of action to expand small scale renewable generation in the area increases the likelihood of development proposals which could be harmful to the AONB.

The National Association collaborative climate change work defined the overall goal for renewable energy as: Facilitate an increase in generation of renewable energy in National Landscapes which does not harm their special qualities. We need a better national strategy and local planning for renewables.

It should be possible to achieve a very substantial increase in renewable energy generation in Shropshire without harm to the Shropshire Hills National Landscape, but achieving the balance is more likely to be achieved by having a clear strategy and policy for renewables in the county, drawing on best practice from other areas and utilising tools such as landscape character and capacity assessment. Raising community engagement on the topic of renewable energy through the development of policy and consultation will help to advance much needed renewable generation, and to close the gap between general high levels of public support in principle and the frequently observed resistance to particular local proposals.

Attitudes and behaviour change

Action on climate change needs to be done at all levels – government, businesses, communities, individuals, etc, and these levels can help to reinforce each other. Climate action should not be all loaded onto individuals, but individual change is integrally linked with system change – in driving societal change and influencing governments. Households in the top 10% of income have disproportionately large emissions, and globally this includes a large proportion of UK households.

The social behavioural model describes how people are influenced by those around them and there are 'social tipping points'. Small scale changes can lead to more and change the way people perceive themselves – action can influence attitudes as well as the other way round.

Climate Outreach bring social science insights and have looked at the difference of attitudes and behaviours in rural communities. They report that climate change is a topic of high concern to rural citizens (87%), across the political spectrum. 60% of rural citizens think that we are already feeling the effects of climate change (56% urban), and rural citizens have high civic and political participation. Compared to those in urban areas, rural citizens are more likely to engage in a range of personal actions to reduce their climate impact such as:

- Recycle, reuse plastic
- Reduce electricity use
- Buy local food
- Improve home insulation
- Switch to renewable energy
- Holiday near home

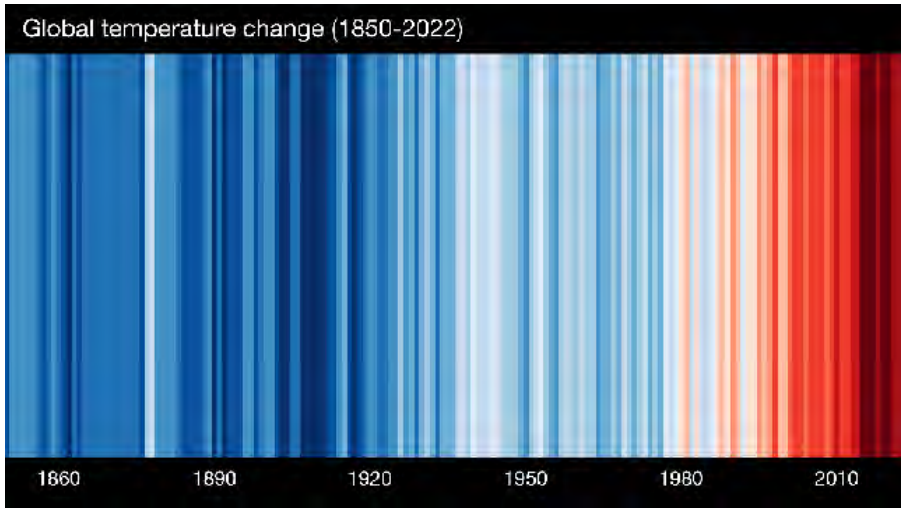
They are less likely to:

- Walk, cycle, and use public transport
- Vote for a political party based on their climate policies
- Attend a climate change protest

Just transition

The impacts of climate change on people are uneven and so too are the impacts of attempts to mitigate carbon emissions. For many climate impacts it is the most vulnerable in society that will be most impacted and have the least ability to adapt. Adaptation actions to address these risks will also have unequal impacts themselves. These may be different to those arising from the climate risks that they are seeking to avoid. There is potential for some adaptation actions to have unintended negative effects, increasing exposure of others to climate risks.

Action to enable a 'just' transition tries to combat this inequality to bring about fairer outcomes as the world transitions to net zero carbon emissions, maximising the benefits of climate action and minimising the negative impacts for workers and their communities. The climate change transition process should be fair and involve all communities, ensuring that no communities are unduly impacted. The importance of the just transition is recognised at the international level through its inclusion in the 2015 Paris Agreement.



Professor Ed Hawkins (University of Reading) https://showyourstripes.info/

Key link to other Plan themes - Nature-based solutions

The National Association collaborative climate change work defined the overall goal for nature-based solutions as: Safeguard the carbon stores in our landscape, reduce emissions from land and increase carbon sequestration, in ways which are compatible with nature. Halt and reverse the loss of good quality habitats and restore and recreate habitat networks across the landscape.

The integration of nature-based climate solutions with actions for nature recovery is vital. We must be "nature positive and carbon negative" at the same time. Measures adopted will often have other ecosystem benefits such as flood attenuation and also climate change adaptation benefits to improve resilience. They also connect with climate change mitigation and adaptation through agriculture and forestry – we must look at nature-based solutions holistically. Land (and water) delivers many benefits and services and must not be thought of just in terms of carbon. Nature-based solutions have an important role for tackling climate change, but Carbon offsetting mustn't harm nature or be used as an easy way of avoiding the necessary deep cuts in emissions in all sectors.

The relevant nature-based solutions for the Shropshire Hills are:

- Peatland restoration
- Woodland creation and management
- Water, wetlands and natural flood management
- Grassland and heath

Summary of statutory requirements and duties - Climate
(not exhaustive)

Legally binding government targets for reductions in greenhouse gas emissions - halve emissions by 2030, net zero by 2050

Climate change risk assessment and adaptation reporting duty on public bodies

Planning requirements for energy efficiency in new development (imminent implementation of Future Homes Standard)

PLAN POLICIES - CLIMATE

(See the explanation of what the Policies are)

9. Integrated action

i) Action needs to be taken at the Shropshire Hills level on both climate change mitigation and adaptation, and these aspects should be linked and integrated as far as possible.

10. Mitigation

i) Measures to mitigate climate change should remain integrated with and not harm action for nature recovery.

ii) Greenhouse gas emissions should be reduced in all sectors on a clear pathway to reach net zero by 2050 at the latest.

iii) Developments, activities and trends which increase greenhouse gas emissions should be resisted.

iv) The large existing carbon store in land should be safeguarded by halting losses, and sequestration in land increased.

v) Demand should be reduced in energy use and transport, as well as changing energy sources to renewable technologies. Insulation and retrofit of energy saving measures should be accelerated in existing and especially older buildings.

11. Adaptation

i) Action for climate change adaptation and to increase resilience in all ways should be supported. All development should support adaptation of the landscape, infrastructure and society to climate change.

ii) Nature-based solutions should be applied at scale to increase carbon storage and for climate resilience.

12. <u>Renewable and Low Carbon Energy</u>

i) Small scale and community-led renewable installations should be encouraged. Community low-carbon initiatives in keeping with the Plan's priorities should be supported, and renewable energy proposals should be assessed on a range of sustainability criteria.

ii) Major developments for renewable energy and associated infrastructure should only be allowed in the National Landscape where it is clearly demonstrated that the proposals satisfy the strict tests of exceptional circumstances set out in the National Planning Policy Framework.

iii) Any ground-mounted solar installations in the National Landscape should be at appropriate scales and locations and should:

- **be out of view from key publicly accessible vantage points;**
- **maintain, protect, and enhance existing landscape features and heritage assets;**
- **include appropriate planting to screen site infrastructure, such as fencing, substations and buildings;**
- **erect the minimum of external artificial lighting, and where necessary design lighting to be in accordance with the Bat Conservation Trust - Guidance Note GN08/23 Bats and Artificial Lighting at Night; and**
- **prioritise brownfield land over greenfield sites (and if a greenfield site is selected, justification of site selection process and reasoning of selection should be presented).**

iv) Biomass installations in the National Landscape should be at appropriate scales and locations.

v) Developments for wind energy and associated infrastructure should:

- **be generally of small scale;**
- **not take place on prominent hills (within the High Open Moorland and High Volcanic Hills and Slopes landscape types);**
- **minimise impacts on landscape, nature, heritage, recreation, scenic beauty, and tranquillity; and**
- **evidence community engagement and local support.**

vi) Renewable energy developments outside the designated area boundary should take account of the special qualities and other key characteristics of the National Landscape.

Plan Recommendations – Climate

(See the explanation of what the Recommendations are)

C 1. Increase the pace and scale of response to climate change.

C 2. Support mutually reinforcing actions at all levels: e.g. government – business – community - individual.

C 3. Support dissemination of accurate information and encourage climate conversations at all levels.

C 4. Encourage behavioural change using understanding from social science as well as technical solutions.

C 5. Support action by local/parish level climate groups.

C 6. Support wide roll-out of Climate Fresk and Carbon Literacy training.

C 7. Promote the concept and practices of just transition as part of climate policies to ensure that no-one is unfairly disadvantaged.

C 8. Undertake more detailed adaptation planning and reporting.

C 9. Raise understanding by publishing more case studies on low carbon initiatives and adaptation.

C 10. Improve resilience of infrastructure to climate impacts where possible, including rights of way, e.g. path drainage, bridges.

C 11. Encourage further Carbon footprinting on farms and action to reduce emissions and increase carbon storage.

C 12. Improve local planning policy and guidance on renewables, including a strategy for increasing renewable generation capacity in the county while protecting the National Landscape.

C 13. Encourage more woodland and trees of appropriate kinds in suitable places, and hedges allowed to grow to larger volume with hedgerow trees.

C 14. Set a high aspiration on net zero compatible travel, applying the transport hierarchy (Avoid - Shift – Improve), seeking to lower car use and encourage active travel – walking, cycling, etc

Plan Aspirations – Climate

(See the explanation of what the Aspirations are)

C(a) Connect organisations who are active on climate – to share knowledge and ideas, and promote engagement, communication and collaboration.

C(b) Explore and promote economic models which work in harmony with climate and natural systems and promote opportunities of a positive low carbon economy.

C(c) Highlight the health and quality of life benefits of low carbon lifestyles, e.g. more active travel, healthier food, reduced stress.

C(d) Raise understanding of carbon storage in soils, land and vegetation and steps to improve sequestration and storage.

C(e) Expand use of biochar to store carbon from waste biomass.

C(f) Explore wider use of carbon markets, taking into account nature and social implications and ethical considerations.

C(g) Seek to minimise air travel connected with people visiting the Shropshire Hills.

C(h) Integrate Nature-Based Solutions for greenhouse gas emissions with benefits for nature, water management, climate change adaptation, etc.

C(i) Cease all horticultural use of peat.

C(j) Highlight good examples of renewable energy generation within protected landscapes.

C(k) Champion visits to and within the area by public transport, where possible highlighting specific services that facilitate and support this e.g. by providing discount to those arriving not by car.