

Energy

During 2020 42% of the UK's energy was produced from renewable energy sources exceeding generation by fossil sources for the first time (nuclear 16% and fossil fuels 39%)¹. Low-carbon electricity can now be produced more cheaply than high-carbon electricity in the UK and globally².

Oils and gas boilers in new homes and commercial properties and as replacements in existing properties are to be phased out by 2033³. The replacements are most likely to be by electric heating. Generation from coal will cease by 2024 and all nuclear plants are expected to retire by 2030 except Sizewell B and Hinkley C (due to start generation by the mid 2020s).

Due to the shift from fossil fuel power and heat generation, the move to electric vehicles and growth in housing the demand for electricity is likely to double by 2050. (add ref) Consequently low carbon generation needs to increase significantly

Some forms of low carbon energy production in or immediately adjacent to the Cotswolds National Landscapes (CNL) can be more controversial than others, for example energy from wind turbines or nuclear power. Whilst further from the area of the CNL, nuclear power as a source of energy together with the current debate on fusion are both of interest to the CNL. Information on the environmental effects of the latter is still being assessed and will be of ongoing concern for the CNL

There are opportunities within the Cotswolds to exploit sources of energy which are consistent with CNL designation. These can include the use of biomass such as wood fuel, solar, anaerobic digestion, air and ground-source heat and micro-hydro. The Cotswold AONB provides a good location to pilot and test new technologies appropriate for the landscape.

As technology improves, ground and air-sourced heat pumps are likely to become more affordable, efficient and quieter.

A key constraint to local energy production is the capacity of the electricity grid and significant upgrading needs to be undertaken by the power distribution companies.

Renewable energy storage technology to overcome 'intermittency' of renewable energy and improve grid control is advancing including batteries, hydrogen cells, thermal storage and compressed air, recharging using excess energy during periods of low demand.

Individuals and communities within the Cotswolds are increasingly exploring ways of producing their energy needs. Results from the Future Landscape workshops (2019) showed there is clear interest in the idea of small scale energy production that benefits the local community. The most popular was photovoltaics on roofs and small field arrays.

1

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/972790/Energy_Trends_March_2021.pdf

² <https://www.theccc.org.uk/publication/sixth-carbon-budget/>

³ Residential oil 2028, commercial oil 2026, domestic and commercial gas 2033.

Predicted impacts of climate change

The move from fossil fuel heating in domestic and commercial properties, combined with new development and demand for electricity to charge electric vehicles will increase demand for electricity in the Cotswolds.

Reducing energy use through improved efficiency and insulation can present issues with traditional building designs and materials, so specialist architectural advice will be required. As ambient temperatures increase such interventions will be increasingly helpful both in the summer and the winter

Demand for local sources of renewable energy and heating can be expected to increase. Support from government and energy generation companies is likely to increase. Whilst the Cotswolds can produce more energy, care needs to be taken to avoid significant adverse effects on the special qualities of the CNL.

There will probably be a higher demand for more community-based energy schemes such as small scale solar and wind power that benefit individual settlements, though schemes in open countryside need to be weighed against their visual impact.

Increased demand for firewood, woodfuels and feedstock for anaerobic digesters is likely to benefit woodlands and unimproved grasslands by providing an economic function for these habitats which will affect their management. However, management could become unsustainable as demand continues to rise, especially if deer populations in woodlands are not managed.

Increasing knowledge about the dangers from particulate matter, from burning of wet wood fuel, and concerns about the energy requirements for producing kiln-dried fuel needs to be taken into account when assessing new schemes. Existing storage facilities may no longer be suitable and may need to be replaced

Planning of renewable energy schemes, and assessment of their acceptability, should take account of any necessary associated infrastructure such as access roads, cables and ancillary buildings. Increased demand for domestic schemes may harm the historic environment through their visual impact on traditional buildings and streetscapes. One way to minimise the impact would be to develop district heating schemes.

Aim

The Cotswolds contributes to the generation of low carbon energy at a scale consistent with conserving the special qualities of the National Landscape

Strategy

	Strategy	Stakeholders
1	Promote opportunities for renewable energy especially where	Local authorities, CNL

	consistent with CNL and Board objectives	
2	Provide guidance for local communities interested in local renewable energy generation to ensure Conservation enhancement	Local authorities, CNL
3	In general oppose large scale energy production inconsistent with AONB designation.	Local authorities, CNL
4	Support increased biomass production where it is consistent with CNL and Board objectives. Priority should be given to biomass from existing woodlands	Local authorities, CNL, FC, NFU, CLA
5	Oppose proposals for biomass energy systems that rely on crops that diminish food production capacity, not least due to the ancillary traffic movements created.	Local authorities, CNL
6	Increase grid capacity	Power distribution companies
7	Promote energy conservation in stone-built structures whilst retaining visual and architectural quality	Local authorities, CNL, Historic England

Buildings and new development

The Oolitic limestone of the Cotswolds is a particularly strong unifying force. It is the building block of the Cotswold landscape, its dry stone walls, churches, grand houses and vernacular architecture of the towns and villages. The unifying character of stone and the distinctive settlements, high architectural quality and integrity are special qualities of the Cotswolds National Landscape

The construction, operation and maintenance of the built environment accounts for 45% of total UK carbon emissions (27% from domestic buildings and 18% from non-domestic buildings) The total operational and embodied carbon footprint of the built environment is 22% of the UK total. Construction of new buildings emits 6% of UK emissions (of which products contribute 55%, transport 10%, and construction 20%).⁴ Newly constructed buildings are more energy efficient, but 80% of buildings in 2050 have already been built and this is likely to be higher in the Cotswolds. 21% of England's residential housing stock pre-dates 1919 and only 12% of homes have been built since 2000 so a major priority is decarbonising our existing stock⁵. Heritage Counts shows that the carbon emissions of historic buildings can be reduced by 60% through refurbishment and retrofit⁶.

Homes are the second largest consumers of energy after transport (which consumes 40%). 28% of all UK energy is consumed by homes. Some 65% of the energy we use in our homes goes to space heating (heating the air), with a further 15% for water heating. Reducing energy for heating is therefore a priority. The energy use of homes is influenced by multiple factors: the building's location, orientation, design, construction and engineering services, but also the way it is used, managed and maintained.⁷

Traditional building also behave differently to modern construction and it is important to understand this difference when considering retrofitting. Buildings of traditional construction tend to have greater thermal inertia than their modern counterparts – they heat up and cool down more slowly. This ability to 'buffer' moisture and heat helps to even out fluctuations in humidity and temperature⁸.

New built development must be designed to achieve net zero standards and seek to minimise embodied carbon through the fabric of the building, plot orientation and incorporation of renewable energy generation whilst still keeping in character with the traditional style or making reference to it. A framework to achieve net zero in new build has been developed by the UK Green Buildings Council⁹. The cost uplift to achieve a net zero new building is around 7-10%¹⁰

⁴ <https://www.ukgbc.org/climate-change/>

⁵ <https://www.ukgbc.org/climate-change/>

⁶ <https://historicengland.org.uk/content/heritage-counts/pub/2019/hc2019-re-use-recycle-to-reduce-carbon/>

⁷ <https://historicengland.org.uk/content/heritage-counts/pub/2020/hc2020-know-your-home-know-your-carbon/>

⁸ <https://historicengland.org.uk/images-books/publications/eehb-how-to-improve-energy-efficiency/heag094-how-to-improve-energy-efficiency/>

⁹ <https://www.ukgbc.org/wp-content/uploads/2019/04/Net-Zero-Carbon-Buildings-A-framework-definition-print-version.pdf>

¹⁰ <https://www.cse.org.uk/downloads/file/cost-of-carbon-reduction-in-new-buildings.pdf>

The embodied carbon in items within the building such as metal and plastic in heating systems needs to be better understood and taken into account and industry knowledge in this respect continues to grow and become more sophisticated.

Manufacturers of building materials such as bricks and concrete blocks are looking to reduce their need for raw materials by using a percentage of waste products such as clinker.

Unlike brick and concrete, Cotswold stone as a building material has low embodied carbon and once dug, worked, transported and used in construction lasts for centuries and can be re-used.

Good quality timber used in building can also last for centuries and has captured and stored carbon whilst growing which is effectively locked away.

Predicted impacts of climate change on development.

The built environment faces increasing risks from the impacts of climate change. These include extreme weather events, flooding, subsidence and overheating, particularly in towns and villages due to the Heat Island Effect. Maintenance costs as a result are likely to increase. Buildings prone to flooding will have increasing insurance costs or prove impossible to insure. The long life cycle of buildings creates the risk of 'energy use lock in'.

To reduce carbon emissions buildings will be required to become highly energy efficient. New buildings will need to be low carbon, energy and water efficient and climate change resilient

Design, layout and materials used will need to change whilst retaining or referencing traditional Cotswold character. Existing buildings will need to be much more energy efficient through a programme of retrofitting.

Green Infrastructure and Sustainable Drainage Systems will become an increasingly important element of new building design and retrofitting.

Aim

That development and the built environment becomes carbon neutral and resilient to the impacts of climate change.

Strategy

	Strategy	Stakeholders
1	Ensure that all new development, domestic and commercial, achieves net zero standards and minimizes	Planning authorities, developers, architects, Planning Inspectorate

	embodied carbon. This should be achieved on-site.	
2	Establish and support retrofitting of existing buildings to become energy and water efficient. Retrofitting should aim to achieve net zero rating.	Government, Planning authorities, developers, architects,
3	Incorporate in new, renovated and ideally retrofitted buildings forms of renewable energy that are consistent with AONB and Board objectives	Local authorities, builders/developers, architects,
4	Modify design, layout and materials used whilst retaining or referencing traditional Cotswold character	Planning authorities, developers, architects,
5	Increase the use of timber in new building and renovations to lock carbon in the structure and reduce embodied carbon	Planning authorities, developers, architects,
6	Re-use and recycle buildings and building materials where possible, reducing the use of new materials and materials with large carbon footprints.	Planning authorities, developers, architects,
7	Avoid wasting energy and carbon also means retrofits that are well planned, high quality and low carbon whilst maintaining the heritage value and natural benefits of traditional homes and buildings	Planning authorities, developers, architects, Historic England
8	Ensure that all new and retrofit development recognises the need to compensate for hotter summers and extreme weather events	Local authorities, developers, architects,

9	Ensure new, renovated and extended buildings have charging points for electric vehicles	Local Authorities,, developers/builders, architects,
10	Establish training programmes for builders, architects and planning officers to understand, traditional buildings, materials, design etc to achieve net zero standard buildings	Universities/colleges, RTPI, Local Authorities
11	Provide advice and guidance on retrofitting buildings, particularly traditional buildings.	Local Authorities, consultants
12	Provide training to upskill builders in retrofitting materials and techniques	Colleges, building companies

Transport

The Cotswolds are easily accessible from major population and tourist centres, with motorways and other high-speed roads passing through or close by the AONB, whilst four railway routes cross the AONB and a fifth runs parallel to the scarp between Birmingham and Bristol. For international visitors, Bristol and Birmingham airports are also close.

Good accessibility has favoured tourism, and also enabled commuting from the AONB to Bristol, London, Birmingham etc and has encouraged second homes. Due to high house prices, many low paid workers commute into the Cotswolds from surrounding population centres.

The volume of traffic, especially visitor traffic is identified as an issue by residents and visitors to the Cotswolds. The number of delivery vans, particularly using narrow lanes and village roads, is also considered to be an increasing issue and the numbers will have grown further due the Covid pandemic and rise in home shopping.

The A417 'missing link' at Crickley Hill is likely to be constructed within the next 5 years, resulting in an increase in traffic using the road and side roads through villages along the corridor.

Due to the rural character of the Cotswolds AONB, reliance on the private car is very high with an average of more than 2 cars per household. However, 3% of households have no car and are reliant on public and/or community transport.

Regular bus services link main centres but most villages have an infrequent or no service. Access to public transport information, particularly timetables, is limited. County bus route maps are no longer published for the Cotswolds area. Rural bus stops no longer have timetables but direct people to Traveline. This assumes access to a smartphone and reasonable signal at the bus stop.

Carbon emissions from transport have dropped by 3% since 1990 but transport remains the largest carbon emitting sector at 28% and accounts for 50% of UK nitrous oxide emissions¹¹. Cars contribute 55% of domestic transport emissions and HGVs and vans 33%¹². 79% of domestic freight is moved by road.

The ownership of electric and plug-in hybrid cars is slowly increasing. There are now over 240,000 battery electric and plug in hybrid vehicles registered in the UK, nearly 230,000 of which are ultra low emission cars, up from just over 1,300 ultra low emission cars in 2010.

The sale of new combustion engine vehicles will be banned from 2030 and hybrid vehicles by 2035. As a result car manufacturers are rapidly moving to electric vehicle production.

¹¹ Transport Statistics Great Britain

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945829/tsgb-2020.pdf

¹² Decarbonising Transport: Setting the challenge

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/932122/decarbonising-transport-setting-the-challenge.pdf

However, barriers to all-electric vehicles are purchase cost, range between charges, charging infrastructure and charging time. All-electric vehicles are considerably more expensive to purchase than combustion engine vehicles but they cost less to run and the purchase price is expected to drop significantly by 2030. Range is limited but battery technology is improving. It should be noted that 94% of car journeys are less than 25 miles and 58% under 5 miles. One solution for long journeys using EVs could be the reintroduction of motorail.

The charging infrastructure across the UK is still very limited with 25,000 public charge points available (3 million will be required by 2035) of which 2,600 are rapid charge points and around 120,000 domestic charge points. Across the Cotswolds AONB there are currently less than 50 public charge points¹³. However, an EV charging station is due to be constructed on the Fosse Way at Bourton-on-the-Water. The charging infrastructure, particularly fast-charging, needs to increase significantly in the Cotswolds and surrounding area to act as a pull factor for visitors.

Most drivers will want to charge their car at home or the workplace, however 20-30% of motorists have no off-street parking and in urban areas 25% of cars are parked on the street overnight.

Hydrogen fuel cell technology has been available for some time but the main barrier has been a lack of a fuelling network, difficulty and cost. This is likely to change due to the Net Zero target and ban on internal combustion engines. Hydrogen Fuel Cells could, in the longer term, provide the way forward for vans and HGVs as well as an alternative to all-electric cars. Hydrogen fuel cell vehicles refuel in a similar way as petrol and diesel vehicles.

National and local policy seeks to encourage a shift from car use to public transport and active travel (cycling and walking), particularly for shorter journeys and commuting. The Coronavirus pandemic has made many people and employers realise working from home supported by technology is a realistic and often more effective and cost efficient option and reduces the need to travel to the office and meetings. Rural internet speeds have improved in many Cotswold communities due to the installation of fibre optic broadband, but line-speed and stability are still problem for many.

Long distance domestic road freight should be reduced by moving more goods by rail and by using more locally produced goods.

Predicted impacts of climate change on transport.

High temperatures can damage rail and road infrastructure through thermal loading, buckling rails, road rutting and overheating of equipment (traffic lights etc) and engines. High temperatures can also cause passenger discomfort leading to a shift in demand and in peak travel times and a move away from public transport to cars with air conditioning. High road surface temperature increase risk of skidding

¹³ Zap Map <https://www.zap-map.com/live/>

Extreme weather events such as gales and heavy rain can adversely affect road and rail safety as well as leading to flooding, erosion, subsidence, damage to equipment and travel disruption. Warmer, drier weather may lead to increased visitor numbers resulting in traffic congestion, increased noise levels and reduced air quality.

Climate change mitigation and adaptation policy aims to move people away from cars to using public transport and active travel. Public transport providers are likely to need financial incentives to increase routes and frequency. Increasing active travel requires improved infrastructure for walking and cycling including safety measures such a separation from vehicles. High temperatures and humidity and wet weather result in a reduction in walking and cycling

Growing use of electric vehicles will significantly increase demand for electricity supply and charging infrastructure which will also require an upgrade of the supply grid.

Aim

That emissions from transport are significantly reduced, electric vehicle charging infrastructure is substantially increased along with an increase in active travel and that transport infrastructure becomes resilient to the effects of climate change.

Strategy

Strategy		Stakeholders
1	Ensure that transport infrastructure is resilient to the impacts of climate change, particularly extreme weather events. Ensure design and materials conserve and enhance the Cotswolds AONB.	Highways England, Network Rail, Highway Authorities (LTPs), Planning Authorities, developers, architects
2	Increase the network of public charging points, including fast-charging, for electric vehicles	Highways England, Local Authorities, businesses
3	All new domestic development to have EV charging points	Planning Authorities, developers
4	All new commercial development (offices, attractions etc) to have EV charging facilities.	Planning Authorities, developers, attractions
5	Encourage and support retrofitting of EV charging points in car parks,	Government, Local Authorities, businesses, tourist attractions,

	commercial and domestic properties	accommodation providers, homeowners
6	Encourage provision of electric cycle charging points.	Employers, attractions, pubs & hotels
7	Encourage and support the switch to EV or very low emission buses, delivery vans and HGVs	Government, Local Authorities, businesses,
8	Encourage and support innovation that reduces duplication of delivery transport. Encourage 'last mile' delivery schemes e.g. community pick-up points	Local Authorities, local businesses
9	Promote the use of public transport and reduced use of the private cars	Local authorities, Dept for Transport, CCB, tourist attractions, accommodation providers, bus and rail companies
10	Ensure public transport is an attractive option by making it affordable, accessible, efficient, regular and direct, particularly at peak travel times – with easy to access timetables and integrated ticketing	
11	Encourage visitors to explore the Cotswolds using 'active travel' and low/no emission transport through well designed and well publicised information on walking and cycling routes, public transport, cycle, electric cycle and EV hire	DMOs, Local Authorities, CCB, accommodation providers, attractions, bus and rail operators
12	Reintroduce published public transport maps	Local authorities
13	Improve cross county boundary bus links	Local authorities, bus operators
14	Encourage bus operators to have provision to carry cycles.	Local authorities, bus operators

15	Ensure increased opportunities for safe 'Active Travel' e.g. Cycle lanes, well maintained rights of way network, facilities for cyclists at places of work etc	Local authorities, businesses including tourist attractions and places of work,
16	Encourage and promote the production and purchase of local goods to reduce the need for road freight.	Government, Local Authorities, purchasers such as schools and NHS, food producers.

The Cotswold Economy

The Cotswolds economy comprises 9,500 businesses with around 54,000 employees. Key sectors in terms of the number of businesses include professional, scientific and technical services and agriculture, forestry and fishing. Business administration and support services, and wholesale, retail and repair of motor vehicles are the most important sectors in terms of employment. Farming and tourism, which are closely associated with the purposes of the Cotswolds AONB, together account for around 20% of employment.

The Cotswolds has an economically active population of around 76,000 (70% of the total population), of which around 55,000 are employees and 17,480 are self-employed. The proportion of self-employed people in the AONB is twice the national average. There is also a higher proportion of managers, professionals, technical staff and skilled trades in the AONB compared to the national average. The unemployment rate is low.

The AONB has a high proportion of well qualified residents, with over 20% having a degree, while the possession of higher qualifications is 40% above the national average

The total turnover of businesses in the Cotswolds AONB is estimated to be around £5,287 million. The total value of this economic activity in the AONB, measured as Gross Value Added (GVA), is estimated to be over £2 billion.

The Cotswolds provide a high quality environment, a good quality of life, a wealthy customer base, access to tourist markets, and a strong brand and image for marketing purposes. The Cotswolds are also centrally located and easily accessible. On the negative side are higher costs, limited staff availability, low housing affordability, limited broadband and transport infrastructure, and a restrictive planning system.

Many AONB residents commute to work outside the AONB to places such as Cheltenham, Gloucester, Bristol, Bath, Oxford, Swindon and London. Likewise people from nearby towns and cities outside the AONB travel into the Cotswolds to work as they are priced out of the local Cotswold housing market.

There are growing opportunities for new sectors, particularly to develop the 'green' economy and for distributed innovation and new local jobs that can be achieved locally via remote working. Nationally the low carbon economy is predicted to grow by 11% per year up to 2030 creating around 1 million jobs. Competition for jobs and growth between LEAs and combined authorities will be high and will tend to be focussed on main centres such as Bristol, Birmingham, Oxford and the Gloucester M5 corridor. The Cotswolds AONB is divided across six different LEAs each with their priorities. It is important that the rural economy of the Cotswolds gains its share.

Some restructuring of the economy has occurred due to the Covid19 pandemic. Employees and employers have realised that working from home is an option for many and that it works, particularly when supported by technology. For some sectors, home working full time or part time has or is likely to become the norm reducing travel and providing support for local businesses such as village shops and pubs. This may result in reduced pressure on infrastructure at peak times by not commuting to other economic hubs but may increase local pressure as residents remain in the area.

Demand for and reliance on good broadband will grow. House prices and demand for development are likely to increase as people realise they can work from home but seek more space and better surroundings. Planning policy within the AONB may restrict the extension of properties or conversion of outbuildings for office space or business expansion and this needs to be taken in account by those looking to move into the area.

Markets are beginning to develop for carbon offsetting, nature-based solutions and environmental offsetting including Biodiversity Net-Gain

Specialist local contractors will be required to fit/retro-fit and maintain clean energy systems and retro-fit energy efficiency measures into existing buildings. There is growing interest in localisation of food production. Land diversification and changes in land management will require specialists and contractors e.g. foresters, natural capital valuation, carbon assessors and natural flood management advisers.

Impacts of climate change

Farming may see some short to medium-term benefits in increased yield, farm diversification opportunities from new crops, local food production and processing. The farming and land management sector will also benefit from environmental offsetting and nature-based solutions and low carbon energy production.

The tourism sector will benefit from warmer summers and a longer tourism season supporting new businesses such as accommodation and attractions but in the longer term may face issues from high summer temperatures. The foundation of the tourism industry is the natural beauty of the Cotswolds and the sector may face issues if the landscape changes too much due to the impacts of climate change or mitigation and adaptation measures.

As people are encouraged to reduce flying, the tourism sector will need to focus on the domestic and near continent markets and away from long-haul markets such as the US and Japan.

Popular visitor destinations and attractions may become overcrowded with loss of amenity and tranquillity. Popular walking and riding routes may become overused leading to erosion, litter and higher maintenance costs. Crops and habitats may be damaged, rights of way fenced off from farmland and areas may be deemed un-farmable and abandoned or promoted for other uses.

Businesses in the Cotswolds will need to mitigate and adapt to the effects of climate change and climate change policy for example by improving water and energy efficiency, and improving their 'offer' e.g. providing EV charging points and taking precautions against extreme weather events. Some sectors based on 'old' technology will diminish and even vanish

Supplies of goods and services may be disrupted by extreme weather events and costs can be increased by changes in national and local policy and cost of insurance. With increased expectations from society and customers businesses will need to demonstrate they are changing. This will increase costs but can also provide marketing opportunities.

Aim

The Cotswolds economy should thrive and grow by mitigating and adapting to the impacts of climate change and taking opportunities presented by technology and the shift into 'green' business sector whilst contributing to the conservation of the special qualities of the Cotswolds AONB.

Strategy

	Strategy	Stakeholders
1	Ensure LEPs support the rural green economy in the Cotswolds through grants and advice enabling business diversification and new business start-ups	LEPs, Local Authorities, CLA, NFU, CCB, local businesses and entrepreneurs, Confederation for Small Businesses
2	Ensure businesses in the Cotswolds have access to green business networks, training and skills development	LEPs, Local Authorities, CLA, NFU, CCB, local businesses and entrepreneurs, Confederation for Small Businesses
3	encourage and support businesses to measure their carbon footprint and make low carbon changes e.g energy efficiency, travel, home working	LEPs, advisers such as Business West, Green Business Grants, CLA, NFU, CCB
4	Support businesses to implement digital ways of working including remote access to enable more people to work from home	LEPs, local authorities
5	Support businesses to use more local sustainable products and supply chains	LEPs, Gloucestershire Regenerative Agricultural and Environmental Transition (GREAT) project, local procurement by Local Authorities, NHS etc
6	Support businesses to become climate change resilient	LEPs, advisers such as Business West,
7	Provide advice and support to the farming sector to adapt to and mitigate the impacts of climate change in a way that that supports the conservation and enhancement of the Cotswolds National Landscape.	Defra (ELM SFI) CCB, FWAG, NFU, CLA, FarmEd, RAU, Farm Carbon Toolkit, Farm advisers/consultants

8	Support farm business diversification that supports the conservation and enhancement of the Cotswolds National Landscape	Local Authorities, NFU, CLA
9	Support non-farm business diversification that supports the conservation and enhancement of the Cotswolds National Landscape	Local Authorities, LEPS, advisers such as Business West
	Provide planning advice to enable business development and expansion	Local Authorities,
10	Explore how to package local renewable energy projects, green jobs programmes and land management projects to attract investment by public and private sources of sustainable capital	Local Authorities, LEPS, NFU, CLA, renewable energy companies
11	Embed in local projects a framework to develop Investor emphasis on environmental impact measurement and increasing market consensus on agreed metrics	
12	Partner with other National Landscapes to "pool" natural capital assets and thereby enhance investability or expand the investor universe	CCB and other national landscapes, NAAONB, NPE, Big Chalk
13	Ensure continued roll-out of high speed, reliable broadband supporting existing businesses, business diversification, new jobs and home working	Local authorities, internet service providers
14	Invest in renewable energy in ways that are consistent with AONB and Board objectives	Local authorities, renewable energy companies , businesses, Energy Agencies
15	Promote sustainable tourism	Local authorities, DMOs, Visit England, CCB

16	Ensure the provision of affordable housing to reduce the need to commute into the Cotswolds for work	Local authorities CCB
----	--	--------------------------

Health and Wellbeing

The health of people living in the Cotswolds is generally better than the national average with a higher life expectancy and higher percentages of healthy eating. Personal wellbeing scores are also relatively high. The Cotswolds have lower rates of early death from cardiovascular disease and respiratory disease and a lower rate of anxiety and depression but slightly higher rates of asthma. Physical activity has dropped by around 5% since 2017. The rate of people killed or seriously injured on roads is significantly higher than the national average.

The trend in the Cotswolds is towards an increasingly ageing population. Representation of all age groups over 45 is significantly greater than the national average whilst all age ranges below 45 are significantly below the national average. Around 24% of the resident population is aged 65+ years increasing by 30.3% since 2007.¹⁴

The health and wellbeing benefits of accessing nature have been known for some time but have come to the fore in recent years and particularly during the 2020/21 Coronavirus pandemic. The health benefits of nature include improving mood and happiness, reducing stress, while encouraging physical activity can help tackle anxiety and depression. Engaging with nature can range from leisurely activities such as gardening, visiting a nature reserve or enjoying the view from Crickley Hill Country Park to physical activities such as walking, cycling or taking part in a Voluntary Warden work party.

The Cotswolds has much to offer but not everyone has the ability to access and make use of the area. Significant steps have been taken to improve access by removing stiles on footpaths and creating Trumper¹⁵ routes but significant barriers remain for many sectors of society within and around the Cotswolds. For example, 13% of children under 16 and 5% of young people aged 16 – 24 never visit the natural environment or spend leisure time outdoors, 18% of children in the most deprived areas never visit the natural environment and groups which visit the countryside least are those over 65, members of the Asian and minority ethnic population and residents of the most deprived areas of England¹⁶.

The Landscape Review proposed a stronger mission to reach out and actively connect all parts of society with National Landscapes, help those who currently fail to benefit, to increase ethnic diversity of visitors, expand volunteering and that National Landscapes cater for and improve the nation's health and wellbeing.

Predicted impacts on health and wellbeing

Human health is affected by climate and weather. Though the health effects of predicted climate changes may not be dramatic, they could be significant, especially to those already in poor health. While milder winters are likely to see a reduction in cold related death and illness, warmer summers are projected to see an increase in deaths and illness from extreme heat. Respiratory illness and related deaths are also likely to increase due to air

¹⁴ <https://www.gloucestershireccg.nhs.uk/wp-content/uploads/2019/10/Appendix-3.2-Cotswold-Profile.pdf>

¹⁵ All=terrain mobility scooters

¹⁶

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/833726/landscapes-review-final-report.pdf

pollution caused by a rise in ground level ozone, and heat and air quality are likely to become particular issues for outdoor workers along with an increased risk of skin cancer.

Warmer temperatures could also increase the risk of vector borne diseases such as Lyme Disease and heavy rainfall events can increase the risk of water borne diseases such as leptospirosis and gastrointestinal infections.¹⁷

Although the numbers of people affected will be small, an increase of extreme weather events, particularly heavy rainfall leading to flooding may lead to increased casualties and an increase in anxiety and depression

Milder winters and to a greater extent warmer summers will provide greater encouragement for people to access the high quality landscape, rights of way and the quieter lanes network of the Cotswolds for 'Active Travel' and generally adopt a more active lifestyle. This should lead to benefits of better physical and mental health and wellbeing. Green space with shade in towns and villages and shade along popular recreational routes will become increasingly important.

Aim

The Cotswolds continues to develop as a place that offers opportunities for communities and visitors to improve their health and wellbeing by accessing and interacting with nature.

Strategy

	Strategy	Stakeholders
	Promote the value and availability of access to the Cotswolds for health and wellbeing	CCB, NHS, Health and Wellbeing Boards, NE
	Encourage and support the health sector to make greater use of accessing nature in the Cotswolds e.g. Green Prescriptions	CCB, Health and Wellbeing Boards, NHS
	Engage with communities within and adjacent to the AONB to help them overcome the barriers preventing them from receiving the health benefits of the Cotswolds	CCB, NE, community leaders, disability groups, local authorities
	Develop and promote the Guided walks programme to encourage new, non-traditional users.	CCB

¹⁷ <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-017-0326-1>

	Reduce physical barriers to access by expanding the network of 'walks on wheels' and Tramper routes.	CCB, Highway Authorities
	Promote awareness of ticks and Lyme Disease	PHE, CCB, National Trust, Wildlife Trusts
	Ensure the inclusion of adequate Green and blue infrastructure within new development and ensure its design encourages engagement by the local community	Local authorities, developers
	Provide guidance for planting trees for shade in green spaces, along recreational routes and for outdoor workers.	CCB
	Promote 'Active Travel' as an alternative to the car.	CCB, NHS, Health and Wellbeing Boards, local transport authorities, NE

Tourism and access

The virtues of the Cotswolds have been extolled since the late 19th Century when William Morris took a joint lease for Kelmscott Manor and began to explore the area. Guidebooks and travelogues began to appear in the early 20th Century. J.B. Priestley described the Cotswolds as 'the most English and least spoilt of all our countrysides a national heritage of great value'. The result is that the Cotswolds has a particularly strong 'brand' used by many local businesses, particularly within the tourism sector. There are a considerable number of guide books on or featuring the Cotswolds.

The high quality landscape and wildlife, and vernacular buildings, towns and villages built of Cotswolds limestone have made the area a popular and well established destination for visitors from the UK and overseas. An estimated 23 million day visitors a year come to the Cotswolds AONB with over 1.7m staying visitor nights within the Cotswolds District Council area alone¹⁸, making tourism the most economically important sector in the AONB worth £1bn to the local economy. This in turn has led to the establishment of a wide range of attractions from parks, gardens, historic sites and buildings and museums, to craft centres and shops with goods marketed towards tourists.

The principle attraction and primary asset for the tourism industry in the Cotswolds is the landscape, traditional stone-built villages and tranquillity¹⁹. Visitors score the Cotswolds higher than other countryside destinations for the quality of the natural environment²⁰. Within the Cotswolds District Council area 75% of day visits are to the countryside accounting for 67% of day visitor spend.²¹ The Cotswolds is a year round attraction with peaks in July, September and December.

As a result of the good accessibility of the Cotswolds and the largely well maintained and comprehensive public rights of way network of around 3,000 miles plus significant areas of access land, the AONB is popular for walking, cycling and horse riding. The area contains or is crossed by more than 20 named recreational routes including the Cotswold Way National Trail and a growing number of routes suitable for accessibility scooters and wheelchair users.

Accessing and enjoying nature and wildlife has become increasingly popular with the Cotswolds an area with a rich variety of wildlife on common land, National Trust land and on nature reserves managed by the wildlife trusts and other organisations as well as in the wider landscape.

The importance of access to the countryside for physical and mental health and wellbeing has also become well understood over the past few years, particularly in preventing and managing health issues.

¹⁸ <https://www.cotswolds.com/dbimgs/Gloucestershire%20&%20districts%202019.pdf>

¹⁹ Cotswolds AONB Survey 2002, Cotswolds@50 Survey 2016, Future Landscapes workshops 2019

²⁰ Cotswolds destination report, Visit England 2018

<https://www.cotswolds.com/dbimgs/Destination%20tracker%202017.pdf>

²¹ <https://www.cotswolds.com/dbimgs/Gloucestershire%20&%20districts%202019.pdf>

Predicted impacts on access, recreation and tourism.

Climate influences where tourists come from, where they go and what they do, which has led to the development of a Tourist Comfort Index (TCI) to assist in the tourism assessment of geographic areas. Such analysis shows that up until now the Mediterranean has had the most desirable climate for tourism. However, as a result of climate change, north-west Europe is now seeing an extension of the season when the TCI is more favourable. As a result, an increase in domestic and international tourism activity in the UK is expected.

This is likely to be predominantly focussed around the coastal zone, but the Cotswolds too are likely to experience a longer tourism season and an increase in visitor numbers on the shoulders of the traditional summer peak (i.e. spring/early summer and late summer/early autumn). The peak season itself, however, of June, July and August, could see a slight decline in numbers, as many may come to find it too hot for traditional activities such as walking, cycling, and visiting towns, villages and attractions.

A longer season and increasing visitor numbers are likely to lead to an increase in traffic, litter and noise, and to erosion of infrastructure such as public rights of way and features at popular countryside destinations. A parched landscape may also be less attractive and at a higher risk of wildfire. Demand for new and improved infrastructure is expected to increase including car parking and electric vehicle charging points, as is demand for water and additional power for accommodation and attractions (e.g. for air conditioning).

Costs of insurance could rise and efforts to cut emissions may add costs to the industry, particularly from transport emissions.

Increased numbers of visitors to the Cotswolds would provide economic diversification opportunities for farmers and woodland owners, and could increase the profile of and demand for products from the area.

The growing tourism sector is likely to increase demand for holiday lets putting pressure on local housing need

As people are encouraged to reduce flying, the tourism sector will need to focus on the domestic and near continent markets and away from long-haul markets such as the US and Japan.

How we respond to climate change and how this would impact on the landscape of the Cotswolds needs to be considered carefully. For example woodland creation, renewable energy infrastructure and changes in land management could diminish the popularity of the Cotswolds as a destination and weaken the brand.

More frequent extreme weather events, particularly heatwaves and storm events will disrupt access and activities, forcing people to stay inside or at home. Rights of way would become difficult to use at times due to mud, flooding and loss or damage to infrastructure such as gates and bridges and surface erosion. Wetter winters will result in people attempting to avoid muddy sections of public rights of way leading to widening resulting in compaction and loss of vegetation including crops. A longer growing season will require more management of vegetation growth. As a consequence the cost of repair and maintenance will increase. Drier summers bring the risk of wildfire.

Pressure on the rights of way network and access land will increase due to the lengthening 'season' and the growth in accessing the natural environment. Improvements in outdoor clothing and equipment including e-bikes are enabling activity to be all year round.

Aim

Tourism should remain a major part of the Cotswold economy and increase its profile in the off-season and aim to become carbon neutral by adopting appropriate mitigation and adaptation measures whilst ensuring that the Cotswold landscape continues to provide a quality experience.

Access and recreation infrastructure becomes resilient to climate change through design, materials, investment and information and guidance for users and land managers

Strategy

	Strategy	Stakeholders
1	Through effective messaging help visitors understand how they can help care for the Cotswolds and how they can reduce their carbon footprint	CNL, DMOs, Green Tourism, local authorities, Accommodation providers, attractions,
2	Ensure visitors across the Cotswolds have consistent and integrated information and access to services to make it easier to adapt and change behaviours.	DMOs, local authorities, attractions, accommodation providers, CNL
3	Encourage visitors to use public transport and active travel e.g. concessionary rates at attractions if arrive on public transport, cycle or foot	Attractions, accommodation providers, transport providers, DMOs
4	Offer electric car and cycle hire.	Accommodation providers, car hire companies, local businesses, Network Rail
5	Discourage flying to visit the Cotswolds by focusing on the domestic and near continent markets	DMOs, Visit England
6	Ensure changes in land management and use are consistent with the special	CNL, ELM delivery body, FC, EA, farmers and land managers, local authorities,

	qualities of the Cotswolds, the primary asset of the tourism sector.	environmental charities e.g Woodland trust, Avon Needs trees and Protect Earth.
7	Provide support to the tourism industry so that it mitigates and adapts to climate change in ways that are consistent with AONB and Board objectives	local authorities, Green Tourism, DMOs, VisitEngland, Accommodation providers, attractions,
8	Encourage investment in the landscape, access and access management by the tourism sector through a visitor Giving Scheme	CNL (Caring for the Cotswolds), DMOs, Green Tourism, local authorities
9	Ensure adequate provision of car parking (with EV charging) at attractions including small informal car parking at points to access the countryside	Local authorities, attractions, DMOs, landowners,
10	Manage historical and natural features of interest to take account of the impacts of climate change and the increasing pressure from visitors	NE, EH, local authorities, landowners/managers, wildlife trusts, National Trust
11	Raise awareness of the need for better biosecurity to prevent the spread of disease and problem species.	Local authorities, CNL, DMOs, VisitEngland
12	Develop a robust access network which is resilient to the impacts of climate change, including increased usage and demand for new activities. E.g. increasing height and span of bridges across water courses and drainage ditches to prevent loss or damage in flood events.	Local authorities, farmers and land managers, CNL,
13	Move towards smaller, pre-emptive type works on public rights of way and access land to avoid the need for larger	Local authorities, CNL, farmers, landowners and land managers

	maintenance projects in the future	
14	Work with farmers and land managers to help them manage the impacts of tourism and access and create a climate change resilient access network.	Local authorities, CNL, farmers, landowners and land managers
15	Seek improvements to access provision through E.L.M. where it will be beneficial.	Defra, ELM delivery body, farmers and land managers, Local Authorities, CNL
16	Provide training and development for all public rights of way/access staff, volunteers and contractors	Local authorities, CNL, National Trust, Wildlife Trusts