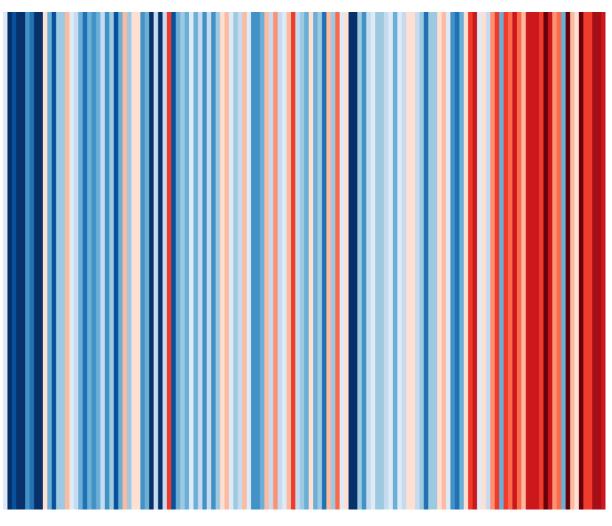
Cotswold District Council Climate Emergency Strategy 2020-2030

[draft]



Graphical presentation of annual temperature anomaly, England, 1884-2019¹

¹ https://showyourstripes.info/

Contents

1	For	ewor	d	6
2	At a	a glan	ce	8
3	Abo	out th	is strategy	. 10
4	The	e impe	erative for action	.11
	4.1	Inte	rnational progress on tackling climate change	.11
	4.2	UK p	progress on tackling climate change	.12
	4.3	UK	climate impacts to date	.13
	4.4	UK f	uture climate impacts	.13
	4.4	.1	Heat and precipitation	.14
	4.4	.2	Excess summer deaths	.15
	4.5	Evid	ence of citizens' views	.16
	4.6	Spe	ed of change and the need for local leadership	.17
5	Cha	alleng	es, opportunities and risks	.18
	5.1	Cha	llenges	.18
	5.2	Орр	ortunities	.18
	5.3	Risk	S	.19
	5.3	.1	Planning White Paper	.19
	5.3	.2	Recession	.19
	5.3	.3	Covid-19	.19
	5.3	.4	Unitarisation	.20
6	Org	ganisir	ng principles	.21
7	Gre	enho	use gas emissions from Cotswold District	.25
	7.1	The	national context	.25
	7.2	Cots	wold district emissions	.26
	7.2	.1	Territorial (production) emissions	.26
	7.2	.2	Consumption emissions	.30
8	Gre	enho	use gas emissions from the Council's operations	.33
9	Em	ission	reduction targets	.35
	9.1	A di	strict-wide target	.35
	9.1	.1	Context setting	.35

	9.1.2	Identifying and communicating a district-wide target	36
9.	2 The	e Council's operational target	37
10	The C	Council's scope to act and priority action areas	
10).1 Lev	vers of influence	39
	10.1.1	Direct control	40
	10.1.2	Indirect control	40
	10.1.3	Place shaping	40
	10.1.4	Enabling	40
	10.1.5	Engaging	40
10).2 Illu	strative projects and actions	41
11	Appe	ndix 1 – Foundations	42
12	Appe	ndix 2: Links to external support	44
13	Appe	ndix 3: Illustrative projects and actions	45
13	3.1 Ind	licative direct control action areas	45
	13.1.1	Waste fleet	45
	13.1.2	Affordable housing	45
	13.1.3	Data and carbon reporting	46
	13.1.4	Staff knowledge, training, support and working practices	46
	13.1.5	Trinity Road	46
	13.1.6	Energy projects at commercial and non-commercial sites	47
	13.1.7	Major developments and investment projects	47
	13.1.8	Electric vehicles	48
	13.1.9	Leisure centres	48
13	3.2 Ind	licative indirect control action areas	48
	13.2.1	Sustainable procurement, commissioning	48
	13.2.2	Renewable electricity procurement	48
	13.2.3	Staff commuting and home working	49
	13.2.4	Co-investment in capital projects	49
13	3.3 Ind	licative place shaping action areas	49
	13.3.1	Transport	49
	13.3.2	Renewable energy strategy	49
	13.3.3	Economic development	49
	13.3.4	Local plan review	50

Annex A

13	3.4 Indi	cative enabling action areas	50
	13.4.1	Promoting and supporting electric vehicle use	50
	13.4.2	Supporting whole house energy retrofit	50
	13.4.3	Supporting renewable electricity switching	51
	13.4.4	Facilitating community-owned renewable energy	51
	13.4.5	Solar neighbourhoods	52
	13.4.6	Multi-stakeholder energy projects	52
13	3.5 Indio	cative engagement action areas	53
	13.5.1	Supporting citizen led initiatives	53
	13.5.2	Climate communications strategy	53
	13.5.3	Signposting information and resources	53
	13.5.4	Engaging key stakeholders	53
	13.5.5	District wide carbon reduction target	53
	13.5.6	Climate panel	53
	13.5.7	Town and Parish Councils	54
14	Appen	dix 4: Summary of CDC's Climate Emergency Declaration	55

Annex A

Figure 1: Paris agreement likely overshoot (Climateactiontracker.org)	12
Figure 2: 2017 Climate Change Risk Assessment report (UK government)	14
Figure 3 Projected changes in temperature, Met Office UK Climate Impacts project	14
Figure 4 Expected changes in precipitation, Met Office UK Climate Impacts project	15
Figure 5: UK territorial (production) greenhouse gas emissions, 1990-2018	25
Figure 6: Relative emissions from six Gloucestershire districts	27
Figure 7: Proportional emissions from all sources, Cotswold District, excl LULUCF	28
Figure 8: LULUCF balance, ktCO ₂ , 2018	29
Figure 9: Time series analysis of district emissions	
Figure 10: Relative change in UK production and consumption emissions	31
Figure 11: Average emissions per person, UK, 2017	
Figure 12: CDC corporate emissions breakdown	
Figure 13: Target setting options for district-wide emissions excluding electricity	
Figure 14: CDC historic and target net emissions	
Figure 15: Levers of influence	

Table 1: District-wide emissions by source, incl LULUCF, ktCO ₂ e	27
Table 2: CDC corporate emissions by source, 2019-20	33

1 Foreword

"We have to change, not by appeals to different kinds of optimism, but to deliberate, compelling, life or death decisions...

The moment of crisis has come. We can no longer prevaricate."

Sir David Attenborough BBC interview, 16 January 2020

Climate change is complex. Few people have time to research the science, and not everyone regularly thinks, and talks to others, about it. However opinion research shows that a majority of people in the UK acknowledge that climate change is real, man-made, already being felt in this country, going to affect everybody, and is making them worried.

The Covid-19 crisis has demonstrated that people pull together in an emergency, and that change can happen very fast when it has to. Nobody wanted the global emissions reduction that accompanied the Covid-19 lockdown to happen for that reason. Nonetheless the lockdown reduced noise and emissions, improved air quality and reinforced our appreciation of our beautiful Cotswold landscape, which will have helped the mental health of many during a very trying period. Research shows that very few people want to go back to "normal" after the worst of the crisis is over, and recognise that this is an important moment of change.

The science is long settled. Climate heating is man-made, and net greenhouse gas emissions must be cut to zero (and eventually reversed). All major agencies agree that the climate crisis, and the closely related ecological crisis, is the biggest medium- and long-term threat to our world and all our livelihoods. These crises, and the strength and effectiveness of our collective response to them, is the defining context of the next few decades, and indeed much further into the future.

Taking action on the climate crisis means two things. Mitigating climate change involves reducing emissions of the main gas that causes global heating, carbon dioxide (CO_2). Adapting to climate change involves managing the physical, economic and social impacts of already inevitable climate disruption. Both have to be done in parallel.

Our success in mitigating climate breakdown will play out over the medium- and long-term measured against a human lifetime, and a split second measured against human history. The benefits of taking ambitious action on the climate emergency, and the nature recovery challenge, are clear. Preserving a liveable climate protects future generations, makes us healthier, and preserves the countryside. It can also create new jobs in growth industries, reduce waste, improve air quality, build fairness, and preserve and improve natural habitat, wildlife, and our enjoyment of it.

Annex A

The threat of a rapidly changing climate requires a global response. But action is also required at every level, from international institutions to governments to individuals. Driving down greenhouse gas emissions will require not less than every human activity to change, but often for the better, from travel to energy generation to food to what we buy to how we use energy in homes and workplaces.

The UK has a legally binding target to reduce net emissions to zero by 2050. That sounds a long way off, but children leaving primary school today will just be in mid-career by that date, perhaps with children of their own. Climate models suggest that unchecked climate change will cause repeated economic shocks, create public health crises and huge pressure on our health system, undermine food production and drive increased conflict and mass migration. If the world, and that includes us, doesn't take determined, rapid and far-reaching action, those primary school children's lives will be much harder, much less secure and much less hopeful than the lives of people reading this.

By its nature the climate crisis will, increasingly, impact every aspect of the lives of Cotswold residents, and every aspect of the work of the Council. Our responses to the climate crisis therefore do not fit into a single policy area. The challenge we are taking on is to integrate the climate emergency response, and the nature recovery challenge, into every aspect of the Council's work.

Cotswold District Council itself has neither the powers nor the pocket to enable the whole District to rapidly reduce emissions and adapt to climate change. Therefore a small part only of the actions can be taken by the Council itself, with Council funds. The much bigger challenge, which will deliver much bigger benefits for all, will be leveraging external knowledge, help and finance, and working with, supporting and promoting the carbon reduction ideas, efforts, and investment by individual citizens, and organisations of every type in the District.

In keeping with the Council's unanimously adopted Declaration of a Climate Emergency in July 2019, this climate strategy is the starting point for a decade of action by Cotswold District Council, to rise to the urgent challenge of the climate emergency.

Responding to the climate emergency is a collective effort from which everyone gains. This is a challenge we all must rise to, or explain to today's primary school children why we didn't.

"The current global crisis has disrupted every aspect of our lives, but it has also presented an extraordinary opportunity; a chance to reset and accelerate efforts to improve the state of our world...

We need nothing short of a paradigm shift, one that inspires actions at revolutionary levels and pace. We simply cannot waste any more time. The only limit is our willingness to act. And the time to act is now."

> HRH Prince Charles WEF, Davos, January 23, 2020

2 At a glance

- This strategy sets out high level principles, imperatives, targets and action areas for responding to the climate emergency (both as a Council and more widely for the district as a whole) for the ten year period 2020-2030, consistent with the Council's unanimous declaration of a climate emergency in July 2019.
- The climate crisis, and the related ecological crisis, present profound threats to the prospects and livelihoods of all Cotswold district residents, but particularly our young people, and future generations beyond them. There is an urgent imperative to act.
- The Covid-19 crisis has shown that people pull together in an emergency, and that change can happen very fast when it has to. We have a chance to make permanent changes for the better, as we recover from the virus.
- Cotswold District as a whole emitted 605,000 tonnes of greenhouse gases (CO₂e) in 2018, equivalent to the emissions from burning about one and a half Cirencester leisure centresized pools of diesel every day. A bit less than half is from road travel (diesel and petrol), a third is from gas and other fuels for heating homes and workplaces, and 15% is from electricity for homes and workplaces. Some carbon is also sequestered (stored) in grasslands, woodland and well managed soils.
- The Council's own corporate emissions for 2019-20 were 2,750 tonnes, or 0.4% of the district as a whole. Half is from diesel used by the waste fleet, a quarter is from gas for heating council buildings and leisure centres, and a quarter is from electricity.
- We propose to develop an emissions reduction target and pathway for the whole
 District. This will extremely challenging, and outside the direct control or resources of the
 Council. The Council will use the target to focus discussions with key stakeholders to
 increase commitment and seek joined-up solutions.
- The Council's target for its own net emissions is to reduce by two thirds from the current level by 2030, and to zero by 2045, with no reliance on offsetting. This is a challenging target, and how the Council organises itself post Covid-19 will affect progress towards it.
- The organising principles of this strategy include being bold; providing leadership; being evidence based; looking for the biggest effects and co-benefits; linking mitigation with adaptation and linking the climate and ecological emergencies; working in partnership; encouraging citizen leadership; and leveraging external help and internal strengths.
- The Council has to work within the constraints of its levers of influence. The Council has a high level of control over some actions that will have only a small emissions impact (relative to the district as a whole), but only a low level of control over other actions that could have a much larger impact. Our leadership role is therefore crucial, in using our own commitments and actions to help others to realise the impact they can have.

Annex A

Priority action areas are broken down by scope of Council leverage. Action areas are divided into direct control (eg council's own operations), indirect control (eg commissioning), place shaping (eg LP policies), enabling (eg proactively helping others to take action) and engaging (eg communicating and consulting)

3 About this strategy

The purpose of this high level strategy is to:

0	Justify why the climate emergency is a top Council priority;
0	formalise a high level of ambition in taking action on climate, commensurate with the Council's declaration of a climate emergency in July 2019 and an ecological emergency in July 2020;
0	set out the high level principles that underpin the development and execution of the strategy;
0	identify the scale and sources of emissions from the district and from council operations;
0	identify the points of greatest leverage in bringing about carbon reductions in the district;
0	set direction and identify priority action areas.

The timeframe of this strategy is 2020-2030, reflecting the importance of the crucial 'Decade to Make a Difference' – the ten years in which the world must see annual greenhouse gas emissions stop rising, plateau, and start falling steeply, if we are to have a chance of limiting global climate breakdown.

Climate science, technology innovation, public understanding, sentiment and behaviour changes, the international and national policy environment for climate action, and the scientific evidence on greenhouse gas emissions and climate impacts, are all changing fast. For this reason it is likely to be necessary for this strategy to be thoroughly reviewed during the ten year period, at least at the mid point in 2025, if not sooner.

At the review point we must expect the evidence of climate crisis to be starker still than it is today. It is very likely that climate scientists will confirm that it will be practically impossible for global heating to be contained below at least 2 degrees Celsius, and probably very significantly higher. This will have implications for the climate adaptation actions the Cotswolds needs to take, and may spur the adoption of even more ambitious carbon reduction targets than are suggested in this strategy.

The strategy does not identify specific actions to be delivered over the decade, but is a high level direction finder which identifies broad priority areas for action. Specific action plans and initiatives will be proposed, approved and reported separately from this strategy, and individual actions referenced in Appendix 3 are illustrative only, and are neither a comprehensive list nor a limit to what the Council can and will do.

4 The imperative for action

4.1 International progress on tackling climate change

In Paris in 2015, the international community achieved a breakthrough by reaching the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) process. The Agreement stated the aim to "hold the increase in the global average temperature to wellbelow 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C". Global heating is already over 1°C.

In 2018 the Intergovernmental Panel on Climate Change (IPCC) released the Special Report on $1.5^{\circ}C^{2}$. The report showed that risks rose significantly between $1.5^{\circ}C$ and $2^{\circ}C$ in terms of damage to ecosystems (species loss, extinction and ecosystems services vital to humans), and extreme weather events (heat extremes, heavy precipitation, droughts). The report also showed that risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase with global warming of $1.5^{\circ}C$ and increase further with $2^{\circ}C$.

The UK has consistently been a global leader in enshrining carbon reduction commitments in law, and the Climate Change Act 2008 now commits the country to reducing net emissions to zero by 2050. The UK has submitted its national emissions reduction commitment to the UNFCCC, alongside all other participating countries.

The problem is that, taken together, these individual national commitments do not come close to the level of emissions reduction required to achieve the limits set in the Paris Agreement (Figure 1). If emissions are reduced in line with stated commitments (and that itself must be questioned), it would lead to global heating of around 2.4°C - 3.8°C by 2100³. Heating at this level can only be described as catastrophic.

² https://www.ipcc.ch/sr15/chapter/spm/

³ Research by Potsdam Institute for Climate Impact Research for Carbon Action Tracker, see:

https://climateactiontracker.org/documents/698/CAT_2019-12-

 $^{10\}_Briefing COP25_Warming Projections Global Update_Dec2019.pdf$

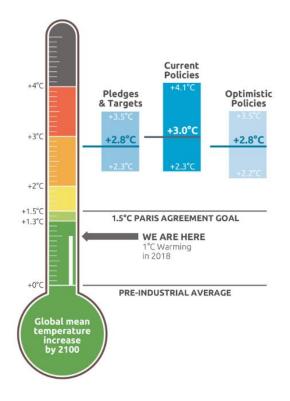


Figure 1: Paris agreement likely overshoot (Climateactiontracker.org)

4.2 UK progress on tackling climate change

The Committee on Climate Change 2020 annual report to Parliament⁴ makes clear that, whilst the UK has met its carbon budgets in previous years, it is not on track to meet future ones. This is exacerbated by the tightening of the UK's carbon reduction target to net zero by 2050 since earlier carbon budgets were set.

The report shows that only a limited number of steps have been taken over the past year to support the transition to a net-zero economy and improve the UK's resilience to the impacts of climate change, and much remains to be done.

Regarding the challenge of post-Covid recovery, the report highlights five clear investment priorities: low-carbon retrofits and buildings that are fit for the future; tree planting, peatland restoration and green infrastructure; strengthening energy networks; improved infrastructure to make it easy for people to walk, cycle, and work remotely; moving towards a circular economy. Many of these priorities relate as much to Cotswold District as they do to the country as a whole.

The report also identifies opportunities to support the transition and the recovery by investing in the UK's workforce, and in lower-carbon behaviours and innovation through, eg, reskilling and retraining programmes, promoting climate-positive behaviours, and targeted science and innovation funding.

⁴ https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/

4.3 UK climate impacts to date

The Met Office's 2020 State of the Climate annual report⁵ shows "an undeniable warming trend for the UK". 2019 was the 12th warmest year in a series over 135 years, and the 24th in a series over 360 years. Four national high temperature records were set in 2019: a new all-time record of 38.7 degC during a brief but exceptional heatwave, a new winter record (by a large margin) of 21.2degC, a new December record of 18.7degC, and anew February minimum temperature record of 13.9degC. 2019 had the second warmest February over 135 years.

All of the top 10 warmest years on record have occurred in the last 17 years. 2020 will not break this trend. The most recent decade (2010–2019) has been on average 0.3degC warmer than the previous decade, and 0.9degC warmer than 1961–1990.

Severe flooding affected the UK in 2019, and will continue to be a significant risk, exacerbated by climate change. Winters in the most recent decade have been on average 5% wetter than the previous decade, and 12% wetter than 1961-1990, however there are long term natural variations that may account for some of this change.

To date, storms have not been a major impact from climate change. There are no significant trends in storminess (maximum gust speeds) over the last five decades.

The Woodland Trust monitors how the seasons are being impacted by climate change, and reported that warmer weather and milder spring temperatures in 2019 saw the first leaves appear on trees almost 10 days earlier than the baseline period. The Trust's chief executive, Darren Moorcroft, warned that these seasonal shifts "could have dire impacts further down the food chain". "Our trees, and all the wildlife they support, are on the frontline of climate change," he said. "This is a stark reminder of the need to take immediate action on climate change."

4.4 UK future climate impacts

The Climate Change Act requires government to produce a periodic climate change risk assessment. The last was 2017^6 (due for update in 2022) and showed a generally high level of risk in most categories reviewed (Figure 2). In the three years since that assessment, atmospheric CO₂ concentration has continued to rise.

⁵ https://www.metoffice.gov.uk/research/climate/maps-and-data/about/state-of-climate

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/584281/uk-climate-change-risk-assess-2017.pdf

Flooding and coastal change risks to communities, businesses and infrastructure (Ch3, Ch4, Ch5, Ch6)		
Risks to health, well-being and productivity from high temperatures (Ch5, Ch6)		
Risk of shortages in the public water supply, and for agriculture, energy generation and industry (Ch3, Ch4, Ch5, Ch6)	MORE ACTION NEEDED	
Risks to natural capital, including terrestrial, coastal, marine and freshwater ecosystems, soils and biodiversity (Ch3)		
Risks to domestic and international food production and trade (Ch3, Ch6, Ch7)		
New and emerging pests and diseases, and invasive non-native species, affecting people, plants and anmals (Ch3, Ch5, Ch7)	RESEARCH PRIORITY	
NOW RISK MAGNITUDE FUTURE LOW MEDIUM HIGH		

Figure 2: 2017 Climate Change Risk Assessment report (UK government)

4.4.1 Heat and precipitation

The Met Office's UK Climate Projections (UKCP)⁷ programme provides the most up-to-date assessment of how the climate of the UK may change over the 21st century. The headline findings for projected future temperatures are given in (Figure 3) and for future precipitation in (Figure 4).

By 2070 temperatures of every season will be higher, hot summer days will be more common and the frequency of hot spells will rise from one every four years, to four every year.

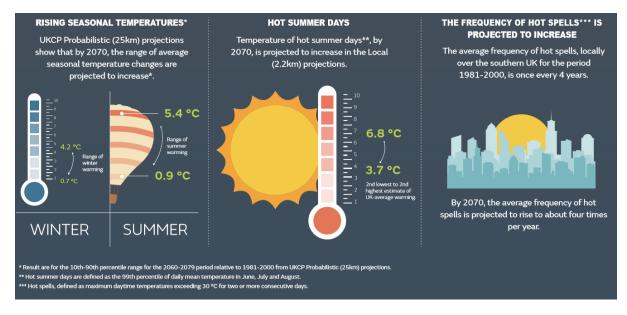


Figure 3 Projected changes in temperature, Met Office UK Climate Impacts project⁸

⁷ https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/index

⁸ https://www.metoffice.gov.uk/pub/data/weather/uk/ukcp18/science-reports/ukcp-infographic-headline-findings.pdf

By 2070 winters will be wetter and summers drier. Extreme rainfall events will increase by 25%, and rainfall will be higher intensity, carrying a higher risk of localised pluvial and fluvial flooding.

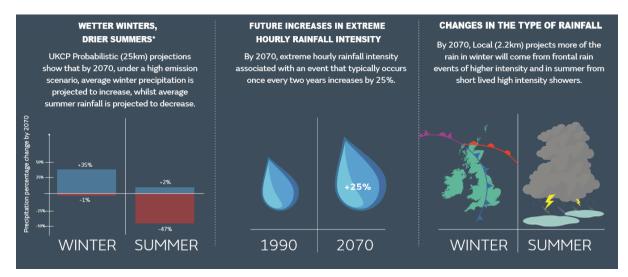


Figure 4 Expected changes in precipitation, Met Office UK Climate Impacts project⁹

4.4.2 Excess summer deaths

Public Health England (PHE) reports 892 excess deaths in 65+ year olds over three heatwave events in 2019. There were more excess deaths in 2019 than in 2018 (863 deaths) and 2017 (778 deaths), but fewer than in 2016 (908 deaths), 2006 (2,323 deaths) and 2003 (2,234 deaths).¹⁰ PHE states that "Heatwaves are predicted to increase in frequency and intensity as a result of climate change. The health impacts of these events can be significant particularly for vulnerable populations when excess mortality can occur."¹¹

The House of Commons Environmental Audit Committee report *Heatwaves: Adapting to climate change* (2018)¹² made clear that heatwaves will increasingly threaten health, wellbeing and productivity. The Met Office predicts that heatwaves of a similar intensity to those in 2003 and 2006, which led to over 2,000 excess deaths each, will occur every other year by the 2040s. The average number of heat-related deaths in the UK is expected to more than triple to 7,000 a year by the 2050s.

We do not have data for excess summer deaths in Cotswold District, but we should note that the age profile of the District is higher than the UK average. The EAC report points out that older people are

⁹ https://www.metoffice.gov.uk/pub/data/weather/uk/ukcp18/science-reports/ukcp-infographic-headline-findings.pdf

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/841320/ PHE_heatwave_report_2019.pdf

¹¹ https://www.gov.uk/government/publications/phe-heatwave-mortality-monitoring

¹² https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/826/826.pdf

particularly vulnerable and suffer increased fatalities from cardiac and respiratory disease during heatwaves.

There is a need for increased public understanding of the risk from heat. The EAC report references the (then) Minister for Public Health and Primary Care recognising that the public tend to see heatwave alerts as "barbecue alerts." The EAC report references government's view that local authorities have a "huge role" in adapting to heatwaves, and this is likely to lead to additional responsibility and cost for CDC in the medium term.

4.5 Evidence of citizens' views

Whilst it has not been possible to consult widely with Cotswold District residents on the climate crisis to date, national and local exercises involving randomly sampled members of the population demonstrate a strong appetite for local authorities as well as national government to prioritise the climate crisis and take determined action.

The UK Climate Assembly¹³, commissioned by six Select Committees of the House of Commons, used stratified random sampling to ensure that the 110 members of the public taking part were randomly chosen but fairly and fully representative of the UK population in terms of age, gender, level of qualification, ethnicity, location, whether urban or rural, and their attitudes to climate change.

Assembly members were given access to expert opinion and data on climate change, presented by some of the most respected experts in their field. An interim report from the National Assembly, focused on the challenge of building back better after the pandemic, showed that 79% of assembly members 'strongly agreed' or 'agreed' that, "Steps taken by the government to help the economy recover should be designed to help achieve net zero". 93% of assembly members 'strongly agreed' or 'agreed' that, employers and/or others should take steps to encourage lifestyles to change to be more compatible with reaching net zero."

Ipsos Mori conducted a similarly rigorous Assembly commissioned by Oxford City Council¹⁴, triggered by the Council's declaration of a climate emergency. The question for the Assembly was "The UK has legislation to reach 'net zero' by 2050. Should Oxford be more proactive and seek to achieve 'net zero' sooner than 2050?" After examining the evidence, 90% of the randomly selected and representative participants said 'yes'.

Other headline recommendations from the Assembly members were that Oxford should be a leader in tackling the climate crisis; enhanced biodiversity was central to the City's overall 'net zero' vision along with more cycling, walking, and public transport, and far fewer cars; the buildings sector should adopt improved building standards, widespread retrofitting, and more domestic and nondomestic energy needs should be met by sustainable sources.

¹³ https://www.climateassembly.uk/

https://www.oxford.gov.uk/news/article/1257/oxford_citizens_assembly_on_climate_change_report_publish ed

It is also worth noting how Assembly members were perturbed by the extent to which the burden of change was – in their eyes – being placed on individuals. The council was challenged to communicate a shared vision and strategy to reaching 'net zero' that shows the roles played by local and national government, businesses, and individuals.

As more Citizens' Assembly exercises are undertaken by Local Authorities, a consistent picture is emerging that residents, when presented with the facts of the climate emergency, consistently call on local leaders to respond more determinedly and raise the ambition.

4.6 Speed of change and the need for local leadership

There are positive signs of change. Public awareness of the threat of climate change is growing, and behaviours are changing, giving greater legitimacy to political decisions to invest public monies and make changes to infrastructure and policies that affect citizens' daily lives.

The electricity system is changing fast. National Grid and the energy regulator Ofgem have said that a fully zero carbon electricity grid is now possible, and new technology innovations are happening with increasing speed. Electric vehicles are the only growing segment of the car market.

Some 70% of councils have now made declarations of a climate emergency, and many have developed strategies and action plans to back them up. In 2021 the UK will host the 26th Conference of the Parties to the UNFCCC – CoP26, delayed by Covid-19 and scheduled for Glasgow. CoP26 is a pivotal event, which it is hoped will deliver even greater commitment and action than CoP22 in Paris in 2015.

Nonetheless overall progress is unsteady and needs to be much faster. Whilst international agreements are important, leadership at local level must be even more committed.

5 Challenges, opportunities and risks

5.1 Challenges

The climate crisis, and our collective response to it, is the defining context for humankind for the foreseeable future. What we do, or don't do, over the next few decades will have far-reaching consequences.

A challenge for all organisations is to find how to move climate change from a stand-alone, ringfenced issue, to a mainstreamed, integrated issue which is universal and embedded across all thought, assumptions and decisions as automatically as any long-established issue like cost effectiveness, welfare, or health and safety.

Rising to the challenge of the climate crisis will cost money. The key reason we are in the climate crisis in the first place is because our economic systems consistently failed to price in externalities – that is, ignored the true long-term cost of exploiting carbon resources laid down over geological timescales (despite full scientific understanding of the danger).

There will have to be a universal paradigm shift in understanding in every part of society that the costs we have to bear now to try and limit the damage we have already done, and prevent it becoming much worse, is simply the cost we decided not to bear historically when we were enjoying the benefits of abundant cheap fossil fuels. That historic profligacy and willful ignorance of climate science has now come back to bite us and future generations, and we must now be prepared to pay, even if those costs clash with established ways of thinking about cost effectiveness and return on equity.

This is a challenge for any organisation that chooses to take a leadership position, since many of these messages and consequences are naturally unpalatable to many. There is intrinsic unfairness in this and future generations having to pay an extremely high price for the lack of care of previous generations. Nonetheless the understanding of the climate crisis is quickly becoming more universal, with much of the impetus coming from large private sector organisations. Local authority leadership now can help accelerate the necessary change.

5.2 Opportunities

Alongside the challenges will be opportunities, not least in the creation of new investment, training and jobs, and in the beneficial physical and social consequences of adopting new low-carbon ways of living and working.

Government spending to build back better after the Covid-19 crisis presents an opportunity to invest in green infrastructure such as active travel routes.

The Council, through its Local Plan review, forthcoming sustainable transport strategy, green economic development plan and other means will seek to get ahead of, and make sure that the district can be a net beneficiary of, the profound changes that are necessary across all of society.

The opportunities for the district may include, for example, new employment in businesses servicing new green industries such as whole-house retrofit of low carbon technology to minimise householder running costs, new ways of doing agriculture than emphasise local supply chains, and green infrastructure investments. Others will be jobs associated with renewable energy generation, building a network of electric vehicle changing points, building a network of safe and attractive cycle routes, and all the associated economic benefits / cost savings that would come with improved health and wellbeing and tourism.

5.3 Risks

There are significant potential near- and medium-term risks to the delivery of this strategy.

5.3.1 Planning White Paper

If changes are made to the planning system in line with the intentions set out in the MHCLG white paper Planning for the Future (August 2020), it will probably severely restrict the Council's ability to set local policy on carbon and energy efficiency of new developments. It has already been noted that the white paper pushes the requirement of zero carbon development off to 2050 (compared to its long-abandoned original target date of 2016), so immediately undermining the ambition of many Councils to push for much faster adoption of this benchmark.

5.3.2 Recession

The UK is entering a period of recession, with the biggest fall in GDP of any G7 country, in the context of the deepest global economic downturn since the 1930s. The fallout of the pandemic, and the speed of economic recovery for this country are unknown, but a sustained recession will undermine confidence and the ability to deliver projects of every type.

5.3.3 Covid-19

Most commentators predict that we will have to learn to live with the virus. If the kind of short term changes we have made to adapt to the virus become permanent, it will affect many aspects of how we live, shop, travel and work, and therefore will change the assumptions underpinning the investment case for low carbon projects.

Many uncertainties hang over how and whether Covid-19 it can be defeated. These include the eventual uptake rate of a vaccine (once available), possible changes to the virus itself, increased understanding about its long-term effects, and indeed the emergence of similar global pandemics fuelled, partly, by our over-exploitation of the natural world.

5.3.4 Unitarisation

Whilst still highly uncertain in process, timeframe and outcome, there may be pressure to move Gloucestershire towards a unitary authority. The risk is two-fold; in the medium term is the uncertainty that any such change introduces to the long-term stability of CDC as a decision maker on local policy and a counterparty to low carbon projects, and in the longer term the potential for a future unitary authority to dilute the low carbon ambition expressed by CDC.

6 Organising principles

In determining and executing our strategy and prioritising the types of action we can take, we will seek to be guided by the following high level organising principles.

Be bold and ambitious; accept and manage risks

The scale of the global climate crisis, and its forthcoming effects on Cotswold district, leave no room for timidity or uncertainty. This was spelled out in the Council's declaration of a Climate Emergency. Responding to the climate emergency requires the Council to take, and learn to manage, a level of economic and political risk in taking actions, and helping others to take actions, which are commensurate with the scale of the emergency.

Provide leadership

The Council's climate emergency declaration commits the Council to providing leadership within the District, and by extension more widely, to help all stakeholders to understand the scale of the emergency more quickly than they might otherwise have done, and to embolden and encourage those already choosing to take action. The climate crisis already is, and will increasingly in the future, affect everyone. Society has reacted far too slowly to this threat to date, and at this moment continues to react far too slowly. We cannot wait until unequivocal consensus is reached on the right course of action – leadership is needed from all stakeholders now.

Follow the evidence

A district council cannot also be a climate science expert. However we will access highly reputable interpretations of the rapidly evolving science on climate breakdown, and what it means for Cotswold District, provided by bodies like the Committee on Climate Change and the Met Office. We will also track and take account of the evidence of fast, deep and wide-scale change in both public attitudes and corporate decision making in favour of a net zero carbon future, to be achieved sooner than the present national goal of 2050.

Determine and promote a stretching district-wide emissions reduction target and pathway

Most Local Authorities that have declared a climate emergency have also adopted area-wide reduction targets, often more ambitious than the UK's current legally binding target of net zero territorial greenhouse gas emissions by 2050. Many have not made clear how such a target may be reached, which stakeholders must be involved, and the role of the council in achieving it.

We acknowledge the limits to the Council's direct powers and influence, and will conduct research to determine a district-wide science-based emissions reduction target based on the level of reduction required to contribute fully to meeting the Paris Climate Accord, and which also seeks a fair allocation of effort and reward across all communities. We will identify actions that may be taken by stakeholders across the district, and the emissions reduction pathway that those actions could deliver.

Focus on the biggest wins

We will seek actions that deliver the largest greenhouse gas reduction impact, and which focus on the largest emissions categories in the District (agriculture, road transport, heating buildings) as well as the largest categories of our own emissions (waste fleet fuel, gas for heating). We will resist the temptation to focus on actions with high public relations value but small emissions value, even though actions delivering large reductions are hard and require us to work creatively with many other stakeholders.

Connect mitigation and adaptation

Whilst climate mitigation and adaptation are separate tasks, wherever possible we will seek actions that link the two, ideally having a useful impact on both objectives simultaneously.

Connect the climate and ecological emergencies

The Council voted to declare an ecological emergency in July 2020, putting ecological issues at the heart of the Council's actions to deliver nature recovery across the district. We recognise that the two emergencies are intimately linked and wherever possible we will seek actions that help to tackle both objectives.

Maximise co-benefits

In taking climate action ourselves, and supporting others to take action, we will identify and seek to maximise the co-benefits of those actions, and wherever possible align these with the Council's other priorities and statutory responsibilities. Whilst the primary focus of climate actions will be on adaptation and emissions reduction, there will be co-benefits not measured in tonnes of carbon, which may include, among others, economic regeneration, improved air quality, better public health, increased enjoyment of and access to nature, new employment and skills, investment opportunities, reduced fuel poverty and greater community spirit.

Deliver fairness

As well as the long-term benefit of helping to assure a liveable climate for Cotswold residents, and the potentially multiple associated co-benefits of climate actions, there will also inevitably be additional cost, disruption, changes to the status quo and changes to behaviours and expectations. These changes will touch everyone in the country, from individual citizens to every sort of organisation.

Public attitude research consistently shows that most people hold fairness as a high principle when enacting necessary change. At local level this will mean thinking carefully about where the burden of costs and changes falls, seeking to protect the most vulnerable and least well-off (who will anyway be most impacted by forthcoming climate change), and providing leadership to show the justification for necessary changes.

Work in partnership

As stated elsewhere, Cotswold District Council has neither the powers nor the pocket to deliver emissions reduction across the district at the scale necessary. However we will be able to work in partnership with stakeholders across the district to share information, develop new ideas, align our climate objectives and communications, co-invest, and seek new collaborative opportunities for emissions reduction projects.

The Council will also do everything within its power to encourage the developers of any large scale or infrastructure projects, which have significant climate impact, to take a courageous lead in voluntarily aiming at the best possible emissions target, consistent with the scale of the climate emergency that faces us all.

Encourage and support citizen leadership

The Council's declaration of a climate emergency in July 2019 stated the aim of creating a citizens' climate panel to help guide the Council's actions and to better link with communities on the climate emergency. As with virus pandemics, systemic threats of any kind bring people together since collective action is essential where everyone is at risk, and everyone benefits from the solutions. Climate change is many orders of magnitude larger than Covid-19 in its medium- and long-term damaging impacts.

The climate crisis is universal and therefore awareness of it, and responses to it, must be shared as widely as possible. We will enable and support individual Cotswold residents and existing and new community-based groups with a focus on the climate and ecological emergencies, to own the problem as well as the solution, provide local leadership which reinforces the Council's aims, and encourage faster and wider response to the emergencies among all communities in the District.

Replicate and share good ideas

To be efficient with limited resources we will avoid re-inventing the wheel. As the country wakes up to the depth of the climate and ecological crises there is a burgeoning range of ideas, support and opportunities for collaboration, all of which can reduce risk for the Council and other stakeholders, speed up actions, and maximise effectiveness.

Responding to the climate emergency is becoming mainstreamed, and being part of networks such as the Countryside Climate Network, which Cotswold District Council is a founder member of (an initiative of the UK100 network Local Government leaders focused on climate and clean energy policy), is just one channel for accessing and sharing these ideas. To tackle the climate crisis it is no longer necessary to carry innovation risks alone.

Leverage external resources

Commensurate with taking controlled risks and collaborating with others, we will seek to leverage external finance, expertise, ideas, support and projects, to magnify the impact of what we would otherwise achieve with our own much more limited resources.

Leverage internal strengths

Whilst Cotswold District Council has practical constraints of tangible resources such as finance, land, buildings and human resources, it has important intangible assets which can be leveraged to support others taking action. The Council is a stable long-term body, and therefore able to enter long term contracts that help to de-risk, and therefore reduce the costs of, projects such as renewable generation.

The Council has long-term relationships with many stakeholders, a close understanding of the settlements in the District, and is a trusted 'brand'. These can be leveraged to help accelerate the uptake of new initiatives such as green electricity switching, rooftop PV investment, electric vehicle uptake and home energy retrofit, even when the Council itself is not the implementing body.

7 Greenhouse gas emissions from Cotswold District

7.1 The national context

As the graph of UK territorial emissions¹⁵ shows (Figure 5), thirty years ago the UK's biggest greenhouse gas emitter was industry, closely followed by power generation. Third on the list, with half the emissions of industry and power, was vehicles and buildings. Today the story is very different.

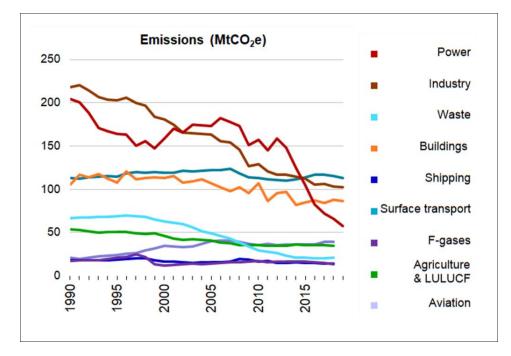


Figure 5: UK territorial (production) greenhouse gas emissions, 1990-2018

Industrial emissions have dropped significantly – both through greater efficiency, but also because globalisation has pushed a lot of manufacturing overseas, and those consumption emissions – that is, emissions from manufacturing and transport elsewhere in the world, associated with the things we buy - are not recorded in this graph.

The really dramatic change is in power generation. The increasing use of gas (displacing coal) from the 1990s onwards, and more recently the huge growth in renewable energy generation, has slashed emissions from power generation by three quarters. That's impressive, and indeed since renewable energy is now more cost effective than thermal generation (that is, burning coal, oil and gas to make electricity), it is foreseeable that we could eventually have a near-100% renewable powered grid in this country.

¹⁵ Data from Committee on Climate Change, supporting the CCC's 2020 annual report to Parliament. See: https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-toparliament/#supporting-research,-charts-and-data

The really stubborn emitters are vehicles and buildings. Vehicle emissions have flatlined for thirty years, and is now the biggest single emissions category. The uptake of electric vehicles has started, but has not yet had an impact on emissions, and indeed market forces (such as the popularity of sport utility vehicles) has actually moved the graph the wrong way in recent years.

Emissions from buildings (that is, heating) has barely dropped in 30 years - energy efficiency of the UK's housing stock is generally poor, and improving household energy efficiency (whilst being vital, and bringing dramatically lower energy bills to householders) will be expensive and disruptive, requiring the replacement of gas boilers by high efficiency electric heating, and increasing insulation.

National level progress to date leaves no room for complacency. As the Committee on Climate Change's 2020 recent annual report to Parliament¹⁶ makes clear, whilst the UK has met it's carbon budgets to date, it is projected to miss future ones, and that's before taking account of the revision to the legally binding target of net zero emissions, which used to be -80%, and is now -100% by 2050 (from a 1990 baseline).

The country, just like businesses, individuals and public sector bodies like Cotswold District Council, now faces the really hard work. Many of the easy wins (like swapping coal generation for gas) have been done, and the legally binding target of net zero emissions by 2050 requires a much steeper fall in emissions per year from now onwards, than we have achieved to date.

For individuals and organisations at local level, it is true that much of the heavy lifting in building low carbon infrastructure - like installing offshore wind turbines or building nuclear power stations or manufacturing electric vehicles for example - is being done by others. However we won't achieve the zero carbon future we need unless individuals and organisations play an active role in spending their own money and adapting their own behaviours to enable the big infrastructure changes to take effect.

7.2 Cotswold district emissions

7.2.1 Territorial (production) emissions

The most recent BEIS data (2018) for Cotswold District shows net emissions of approximately¹⁷ 605 ktCO₂e, equating to around 6.8 tCO₂e per resident, and 0.52ktCO₂e/km2 of land area (Table 1: District-wide emissions by source, incl LULUCF, ktCO₂eTable 1). This comprises approximately¹⁸ 650ktCO₂e arising directly from fuels burned and electricity consumed (generated mainly out of the district), less an estimate of carbon removed from the atmosphere - that is, sequestered (or stored) in plants and soils in the district (approximately negative 44.5ktCO₂e), termed LULUCF (land use, land use change and forestry) emissions.

¹⁷ 604.8 ktCO₂e

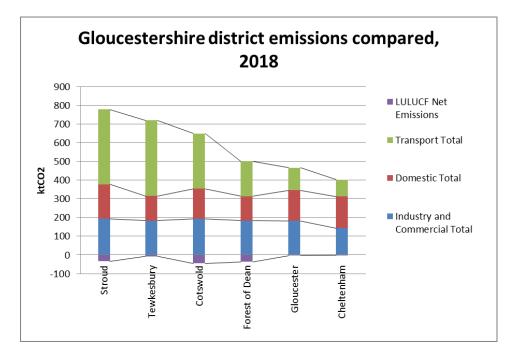
¹⁶ https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/#supporting-research,-charts-and-data

¹⁸ 649.3 ktCO₂e

Cotsw	rold District-wide GHG emissions by source, 2018, ktCO ₂ e	Emissions, ktCO2e	Individual percentage of total excl LULUCF	Category percentage of total excl LULUCF		
ø	Industry and Commercial Electricity	48.8	7.5%			
Industry, commercial & agriculture	Industry and Commercial Gas	27.6	4.3%			
Industry, mmercial gricultur	Large Industrial Installations	3.7	0.6%	29.8%		
lnc omr agri	Industrial and Commercial Other Fuels	77.9	12.0%			
Ŭ	Agriculture	35.3	5.4%			
S	Domestic Electricity	52.2	8.0%	24.8%		
Homes	Domestic Gas	73.7	11.3%			
Í	Domestic 'Other Fuels'	35.5	5.5%			
ų	Road Transport (A roads)	200.3	30.8%	45 40/		
Transport	Road Transport (Minor roads)	86.7	13.4%			
rans	Diesel Railways	2.3	0.3%	45.4%		
F	Transport Other	5.5	0.8%			
	Total emissions excluding LULUCF:	649.3				
	Forest (sequester)	-59.5	-9.2%			
LULUCF	Grassland (sequester)	-49.0	-7.5%	-6.9%		
	Settlements (emit)	30.0	4.6%	-0.9%		
	Cropland (emit)	34.0	5.2%			
	LULUCF emissions:	-44.5				
	Total net district emissions including LULUCF:	604.8				

Table 1: District-wide emissions by source, incl LULUCF, ktCO2e

For context, Cotswold District annual CO₂ emissions are equivalent to the emissions from burning about 560 Cirencester leisure centre-sized swimming pools of diesel each year, or driving an average family car about 2.7 billion miles. At 18% of the county's total, Cotswold's emissions are the third largest of the six districts (Figure 6).





For emissions excluding LULUCF, slightly less than a third of emissions arise from industry, commerce (offices, shops and venues) and farming. One quarter comes from households, and just shy of half comes from road transport (Figure 7).

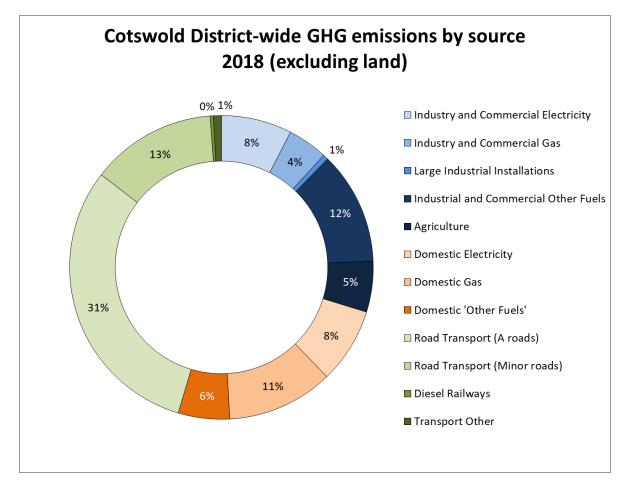


Figure 7: Proportional emissions from all sources, Cotswold District, excl LULUCF

Not included in (Figure 7) is the effect of carbon being emitted from or taken up by land. The balance between carbon emitted and sequestered through land use is an estimate only, and only around 6% of the total, but nonetheless is important (Figure 8Figure 8).

Increasingly, rural and farming parts of the country will need to find more ways to reduce carbon emissions from land, and increase the amount of carbon sequestered into standing biomass and soils. Government's estimate of land-based carbon balance for the Cotswolds shows that carbon is emitted from cropland and settlements, but this is more than offset by the amount sequestered into forest, grassland and well managed soils, leaving a net negative emission figure (that is, sequestered carbon) of 44.5ktCO₂.

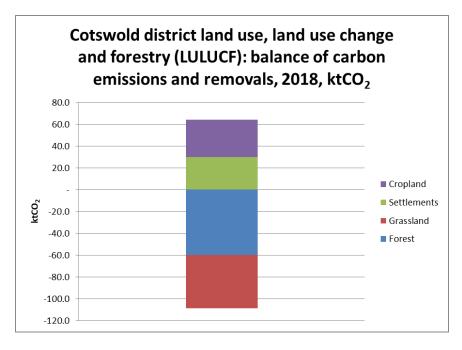


Figure 8: LULUCF balance, ktCO₂, 2018

The proportions of different emissions make clear the challenge for emissions reduction in the District. Electricity emissions will continue to fall as the grid decarbonises, and whilst the District should be able to contribute significantly towards this by building renewable generation, the really tough nuts to crack are road transport and fuels for heating. Burning these fossil fuels emits over 500,000 tonnes of CO_2e per year, or around 85% of the District's total.

The history of greenhouse gas emissions in the District over the last thirteen years (Figure 9) shows how hard it is to reduce these direct fossil fuel emissions. Whilst electricity emissions have fallen steadily, emissions from burning gas, vehicle and other fuels is virtually unchanged.

The same challenge faces the whole country, but as a rural district it is particularly acute. Rural areas do not (currently) benefit from the frequency of public transport and the density of space that cities do. Many properties are still heated by oil, and most residents outside of our main towns rely on private cars. Ours is a large district with a low population density, so distances travelled tend to be larger. Many of the District's older stone properties, whilst having the benefit of remaining significantly cooler during heatwaves than newer properties, can nonetheless be 'hard to heat and hard to treat' (that is, difficult to improve the energy efficiency of).

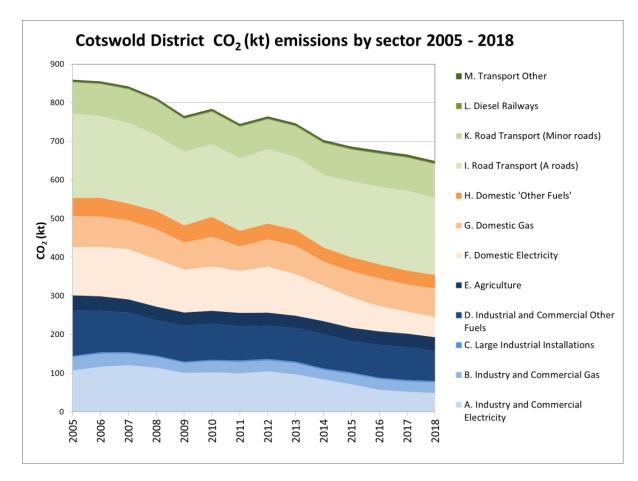


Figure 9: Time series analysis of district emissions

7.2.2 Consumption emissions

Government statistics for greenhouse gas emissions from Cotswold district reported above relate only to emissions that arise directly from activity in the district (such as burning fossil fuels in buildings and vehicles), and emissions from electricity consumed in the district, but mainly generated elsewhere. These are termed 'production emissions', since they arise from activity taking place within the territory.

However for a fuller understanding we of how we as individual citizens, businesses and the public sector affect the climate crisis, we must look also at our 'consumption emissions' – that is, emissions related to the supply of goods and services we buy, including those imported from abroad.

Accurate data for consumption emissions is not readily available for Cotswold district. However we can draw some high level conclusions from UK-wide data.

The first point to note is that, whilst UK emissions from territorial activity ('production emissions') have fallen by over 40% in the period from 1990 to 2018, emissions due to the goods and services

Annex A

we buy and consume have fallen much less – by just 16% to the year 2017 (Figure 10Figure 10)¹⁹. This discrepancy is because, whilst the UK has markedly reduced emissions from the power sector, we have also reduced the amount of indigenous manufacturing, with a much greater proportion of the goods we consume now made overseas, often in parts of the world with high emissions from the manufacturing and power sectors.

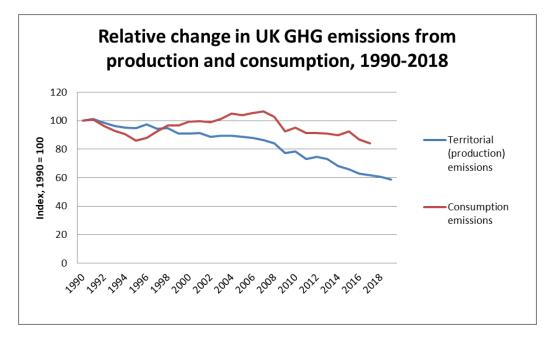


Figure 10: Relative change in UK production and consumption emissions

At an individual level, the average greenhouse gas emissions per person in the UK is around 9 tonnes CO_2e per year (Figure 11Figure 11)²⁰. No data exists for what the emissions footprint is of an average resident of Cotswold district. However the factors that affect individuals' and households' emissions will include wealth, size of property, age of property, amount of air travel, heating system, diet and many others.

For the average UK resident, about half our emissions come from the energy we consume directly (vehicles, home heating etc) and half from the things we buy. The conclusion is that the big wins come from slashing emissions from heating buildings and driving vehicles, followed closely by our food choices.

¹⁹ Committee on Climate Change, supporting data to the 2020 progress report to Parliament, see: https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-

parliament/#supporting-research,-charts-and-data ²⁰ University of Leeds for Defra

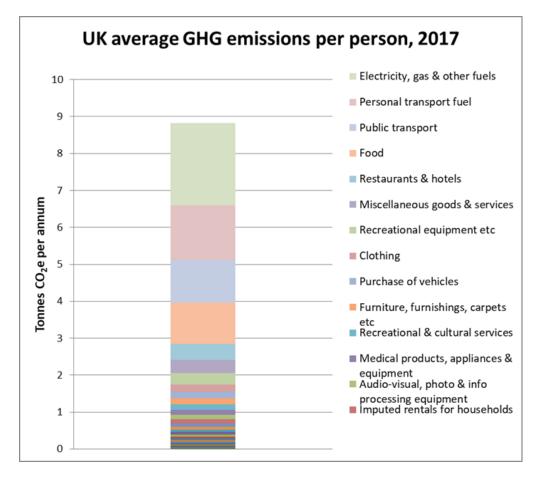


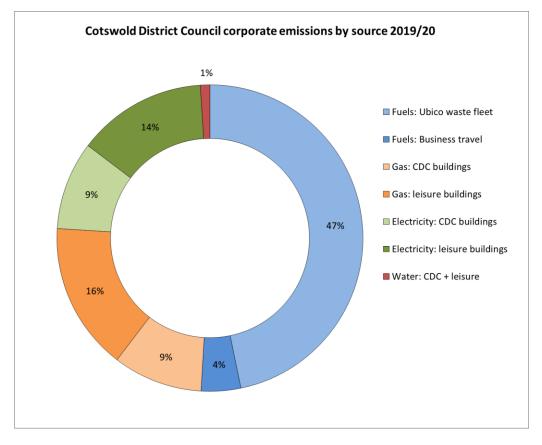
Figure 11: Average emissions per person, UK, 2017

8 Greenhouse gas emissions from the Council's operations

Emissions due to the buildings and operations of the Council, for the most recent year (2019/20) amount to some 2,746 tonnes CO_2e , or around 0.4% of the emissions of the district as a whole (Table 2) and (Figure 12).

Breakdown of 2019/20 CDC corporate emissions by source	Fossil fuels		El a statistica		Total per council	%age per
and council function tCO ₂ e	Liquid fuels	Gas	Electricity	Water	function	council function
Council buildings	-	309.2	327.6	8.0	644.8	23%
Waste services	1,283.8	-	-	-	1,283.8	47%
Staff and Councillor travel	114.7	-	-	-	114.7	4%
Leisure buildings	-	379.2	304.0	19.5	702.7	26%
Total per source	1,398.5	688.4	631.6	27.5	2,746.0	100%
%age per source	51%	25%	23%	1%	100%	







Annex A

Data has been collected according to the principles of materiality and practicality, and audited by an independent external body. No organisational emissions data exercise is ever complete or accurate, but principle sources of data have been collected which enable a fairly complete picture, and enable year-on-year comparisons.

The largest contributor by emission source (51%) is liquid fuels (diesel, petrol), principally for the waste collection fleet, and the second largest (25%) is gas consumption to heat Council buildings and leisure buildings.

Looking at current emissions in the context of the last nine years for which good data has been collected shows good progress by the council to date, with emissions falling from around 4,000 tonnes CO_2e in 2010 to 2,746 today.

The key omission from data to date has been staff commuting. Setting up systems to enable staff commuting to be measured will take time, require additional data input by staff, and will never be precise. However this is an important data set to capture, since incentives and changes of habit are likely to deliver significant carbon savings.

One result of the Covid-19 crisis has been much more home-working and much less commuting. Publica's agile working strategy means that staff commuting emissions will continue to be lower than before, but whilst commonsense suggests home working saves carbon, there are many factors and assumptions at play. Estimates by the International Energy Agency²¹ using European averages suggest that workers who avoid a commute by car for four miles or more may save carbon, whereas those who drive less far, or who take public transport or active travel may emit more carbon by working from home. True figures will be very hard to calculate.

²¹ https://www.iea.org/commentaries/working-from-home-can-save-energy-and-reduce-emissions-but-how-much

9 Emission reduction targets

Many Local Authorities with a climate strategy have adopted a target for emissions reduction for their entire administrative area, and all have adopted a target for reduction of emissions from the council's own estate and operations.

9.1 A district-wide target

Government estimates of district-wide emissions are available up to 2018. As discussed elsewhere, emissions from electricity consumption are falling fast, as the grid decarbonises (as more renewable electricity generation is brought on).

Whilst the District must play the fullest part it can in hosting new renewable energy generation, the more difficult task is reducing emissions from road transport and fossil fuels for heating. Since the grid will continue to decarbonise, district-wide target setting must also address the most difficult emission categories – ie, all those excluding electricity.

9.1.1 Context setting

As context for the target setting research, and to illustrate the scale of the challenge, (Figure 13) sets out alternative targets and pathways for comparison.

The 'zero by 2050 straight line' target simply mirrors the net zero target now enshrined in UK law through the Climate Change Act 2008. As the UNFCCC points out, national level commitments to date are insufficient to reach the Paris target of limiting global heating to 1.5degC.

The Science-based targets initiative (SBTI)²² is a voluntary commitment increasingly being made by large corporates, in which they adopt targets based on achieving either the most ambitious Paris target of 1.5degC (1.5C), or else the fall-back Paris target of 'well below 2degC' (WB2C). Whilst mainly used by large private sector firms, it is useful to show the equivalent reduction paths for the District. The 1.5C pathway is steeper (more challenging) than the 'zero by 2050 straight line' pathway, but the WB2C pathway is shallower.

For comparison the diagram also shows the equivalent reduction pathway adopted by the Council relating to its corporate emissions. This is the most challenging pathway of any illustrated, which is consistent with the leadership role the Council wishes to fulfil.

²² https://sciencebasedtargets.org/sbt_events/net-zero-targets-in-the-corporate-sector-option-1/

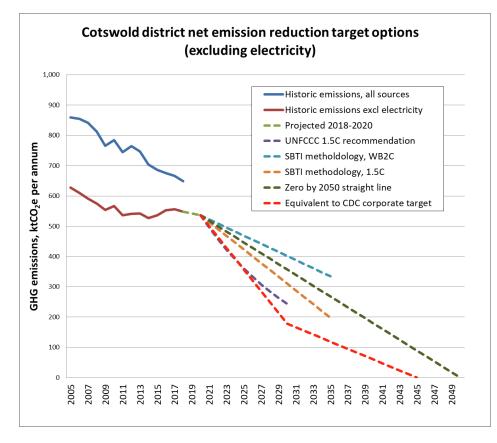


Figure 13: Target setting options for district-wide emissions excluding electricity

The United Nations Environment Programme²³ (UNEP)'s 2019 'annual gap report' spells out how far national commitments to date will deliver the Paris agreement. It makes for sobering reading. UNEP estimates that if existing national commitments are adhered to (a big assumption in itself), it would lead to catastrophic global heating of over 3degC. UNEP states that an emissions reduction of 7.6% per year is now required, for the decade 2020-2030, in order to keep within the Paris limit. This reduction pathway, applied to the district, is slightly less steep than the target adopted by the Council for its corporate emissions.

What is certain is that leaving the attempted achievement of a target to close to the target date will not work. Emissions must be avoided as early as possible in the decade since the heat trapping gases build up in the atmosphere, and leaving action to later increases the cost and disruption of that action.

9.1.2 Identifying and communicating a district-wide target

We will conduct cost-effective research to determine a stretching district-wide emissions reduction target based on the level of reduction necessary to contribute fully to meeting the Paris Climate Accord, and which also seeks a fair allocation of effort and reward across all communities. The target setting research will identify the actions that would need to be taken by stakeholders across the district, and the emissions reduction pathway that those actions could deliver.

²³ https://unfccc.int/news/cut-global-emissions-by-76-percent-every-year-for-next-decade-to-meet-15degc-paris-target-un-report

This will inevitably be an immensely challenging target, in keeping with the scale of the climate emergency. The Council will work with key large emitting stakeholders in the district, as well as engaging with residents, and use the target to raise awareness, focus debate, increase commitment and spur the wider adoption of the target and development of joint projects that collectively can deliver large emission reductions.

In this way the target is above all else a communication tool, but one which is based in science and highlights the lack of international and national progress to date, and the need for all countries, organisations and individuals urgently to reduce emissions.

9.2 The Council's operational target

The target for CDC's own estate and operations forms part of the Climate Emergency Declaration approved unanimously by the Council in July 2019: to *"Make the Council's own activities net-zero carbon as soon as possible, aiming for an 80% reduction against a 1990 baseline by 2030, and a 100% reduction by 2045, with no reliance on offsetting or the trading of carbon credits"*.

The 1990 baseline year is used because it mirrors the baseline used in the Climate Change Act 2008. The Council has recorded its own emissions data only since 2010, but back-casting from 2010 data, using changes in national level emissions as a proxy, suggests Council emissions may have been at around 4,500 tonnes CO_2e in the baseline year (Figure 14).

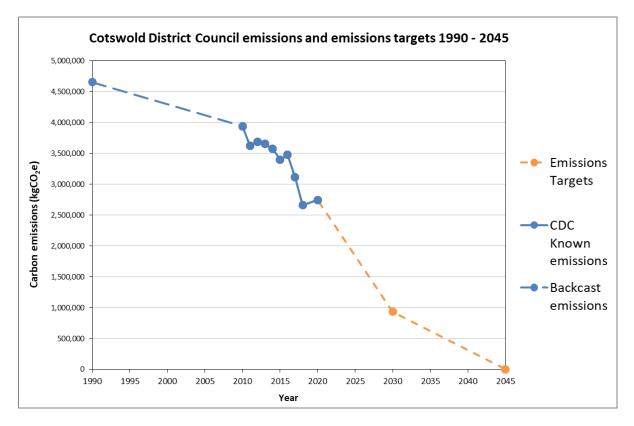


Figure 14: CDC historic and target net emissions

Projecting forward from the baseline year shows the scale of the Council's commitment, aiming to reach around a two thirds reduction from present level by 2030, and zero net emissions by 2045. The Council's annual emissions are reported consistently, and it will be straightforward to report progress towards this very challenging target.

10 The Council's scope to act and priority action areas

Whilst the Council has statutory responsibility for waste collection, local planning policy and other matters, it has neither the powers nor resources to directly drive down district-level emissions which are the responsibility of individuals and organisations. However the Council has an important leadership role, networks and relationships which can be used to assist and influence key stakeholders.

10.1 Levers of influence

A simple analysis of the levers of influence available to the Council (Figure 15) illustrates the difference between control and effect. There are activities over which the Council has direct control (such as decisions relating to assets and property owned and operated by the Council), but which contribute only a small amount to the whole district's emissions reduction. In contrast there are activities that the Council has limited influence and no control over, but which if implemented would have the largest effect on the whole district's emissions.

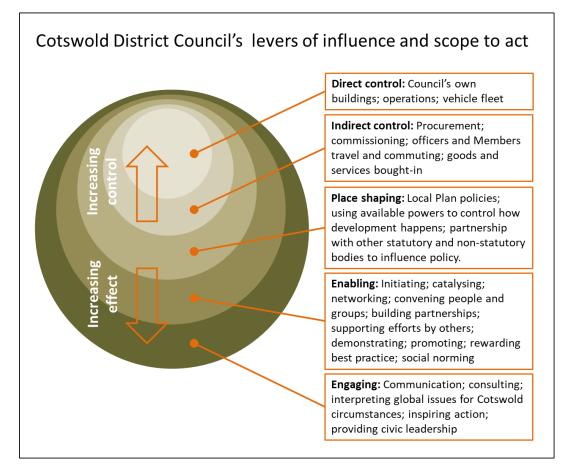


Figure 15: Levers of influence

10.1.1 Direct control

Actions in this category are aimed at achieving CDC's stated target of a minimum of two thirds reduction in net emissions from 2020 to 2030, reaching net zero by 2045. Illustrative action areas include waste fleet decarbonisation through new technology, delivering affordable and net zero carbon housing, widening carbon data capture, improving staff climate literacy, taking action at Trinity Road, and undertaking energy projects at commercial and non-commercial sites.

10.1.2 Indirect control

Actions in this category relate to projects, services etc procured or strongly influenced by the Council, including policies and incentives that encourage employees to act in a low-carbon way. Actions will contribute less directly to CDC's emissions target, affecting mainly 'scope 3' emissions, and will also impact district-wide emissions to some extent. Illustrative action areas include developing a sustainable procurement policy with climate considerations at its heart, putting climate considerations into key policy areas such as economic development and the Council's corporate plan, procuring 100% place-based renewable electricity, reducing carbon from staff home working and commuting, and co-investing in capital projects.

10.1.3 Place shaping

Place making relates to the Council's responsibility for Local Plan policies, but also partnerships where the Council is a key influencer or stakeholder. Illustrative action areas the review of the Local Plan to make it green to the core, creation of a renewable energy strategy for the district for incorporation into the Local Plan, and development of a sustainable travel strategy and action plan for the district.

10.1.4 Enabling

Enabling actions are those where the Council's role is proactive, helping others to take action by initiating new ideas, supporting new projects, promoting initiatives and social norming – helping to make low carbon business decisions and lifestyle choices easy and automatic. Illustrative action areas include promoting electric vehicle uptake, supporting whole-house energy retrofit, supporting renewable energy tariff switching and neighbourhood solar PV schemes, helping to build a community owned renewable energy co-operative, and initiating multi-stakeholder energy schemes.

10.1.5 Engaging

Engagement actions aim to achieve a closer dialogue with citizens and organisations throughout the district on the topic of the climate emergency, and our responses to it. Good engagement is particularly important in the context of the need for rapid and profound change to respond to what, for many, is still an invisible or hypothetical threat.

A key challenge is in accessing all audiences, and opening the engagement up beyond those who are already well aware of the climate crisis. Everyone has their own world view and experiences, and

the impact of climate change will be felt differently by everyone. Good engagement should help us listen to and understand the widest possible range of personal experiences, bring people together round this agenda, and help make the Council's communications and decisions better as a result.

The foundation of successful engagement is a communications strategy. There are great examples of local authorities that have spent considerable sums on innovative ways of engaging the public in the climate topic, but it may not be appropriate for Cotswold to devote such significant resources in this way.

Nonetheless, meaningful and sustained engagement is essential to capture ideas, understand individuals' priorities, and build the public mandate to take increasingly vigorous and innovative action on the climate emergency.

Illustrative action areas include supporting citizen-led activities like Green Open Homes, developing a climate change communications strategy, building on existing good relationships with key organisations in the district, identifying a district-wide carbon target, establishing a climate panel and working with Town and Parish Councils.

10.2 Illustrative projects and actions

Illustrative projects are set out in Appendix 3, and are grouped according to the Council's levers of influence and scope to act - direct control, indirect control, place shaping, enabling and engaging. Appendix 3 contains only a brief summary description of the main issues, alongside illustrative actions.

11 Appendix 1 – Foundations

- CDC Climate Emergency Declaration, July 2019²⁴
- UK's legally binding commitment to zero net carbon by 2050 / Climate Change Act²⁵
- UK's fifth carbon budget 2028-32, and any subsequent revisions²⁶
- The UNFCCC Paris agreement (2015) on limiting global warming to a maximum of 2degC, and aiming for 1.5degC^{27}
- Science-based target setting based on 2015 Paris agreement 1.5 degrees target²⁸
- UK's Intended Nationally Determined Contribution (INDC) related to the Paris Agreement, 2015, and any updates following CoP26, 2021²⁹
- IPCC special report on global warming of 1.5 degrees C (2018)³⁰
- Gloucestershire Sustainable Energy Strategy, GFirst LEP (2019)³¹
- 'Leading the response to the climate emergency' Gloucestershire climate change strategy 2019/20 to 2024/25³²
- GFirst LEP Sustainable Energy Strategy, January 2019³³
- CDC annually reported corporate greenhouse gas emissions
- Cotswold district estimated greenhouse gas emissions as per BEIS, based on National Atmospheric Emissions Inventory, 2018³⁴
- Emerging evidence from the UK-wide citizens' Climate Assembly³⁵

32

²⁴ https://tinyurl.com/yxzncjcs

²⁵ https://www.theccc.org.uk/what-is-climate-change/the-legal-landscape/the-climate-change-act/

²⁶ https://www.theccc.org.uk/publication/the-fifth-carbon-budget-the-next-step-towards-a-low-carbon-economy/

²⁷ https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

²⁸ https://sciencebasedtargets.org/ ²⁹

https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20Kingdom%20of%20Great%20Britain%20and%20Northern%20Ireland%20First/LV-03-06-EU%20INDC.pdf

³⁰ https://www.ipcc.ch/sr15/

³¹ https://www.gfirstlep.com/downloads/2019/gloucestershire-energy-strategy-2019.pdf

https://glostext.gloucestershire.gov.uk/documents/s57482/Item%208%20Glos%20Climate%20Change%20Strategy.pdf

³³ https://www.gfirstlep.com/downloads/2019/gloucestershire-energy-strategy-2019.pdf

³⁴ https://data.gov.uk/dataset/723c243d-2f1a-4d27-8b61-cdb93e5b10ff/emissions-of-carbon-dioxide-for-local-authority-areas

³⁵ https://www.climateassembly.uk/

• Evidence and Action reports from the Gloucestershire Environment and Climate Action Group (July 2019)

12 Appendix 2: Links to external support

There are a number of county, regional and national level initiatives, policies and support structures which are relevant to this strategy, and may be drawn on.

Some 70% of UK local authorities have declared a Climate Emergency to date³⁶. Several Local Authority initiatives support councils to take action on the climate. Cotswold District Council is a founder member of the Countryside Climate Network³⁷, an initiative by the UK100 group of council leaders ambitious to make a difference on the climate agenda.

The LGA is developing support and coordination for LAs to improve efficiency and consistency in setting strategy and policy, and sharing ideas and innovation. The LGA is actively canvassing views from LAs on what kind of support would be the most beneficial, and new products and services are likely to come forward in due course.

The South West Energy Hub, hosted by West of England Combined Authority and fully funded by BEIS, is an information and expertise centre for low carbon transformation in energy generation and use, focused on local energy initiatives. In Gloucestershire the partner is Gfirst LEP. Many of the SW Energy Hub's strategic priorities align well with CDC's objectives, and we are already in discussion with the Energy Hub about possible support to initiatives in the Cotswolds. Support is available from the Energy Hub for project development up to procurement stage.

Gloucestershire County Council's Climate Emergency Strategy 2019/20 to 2024/25 is consistent with this strategy.

Gfirst LEP's draft Local Industrial Strategy³⁸ (2019) states the aim for the County to reduce carbon emissions to net zero by 2050, with aspirations to go further and faster. Whilst the draft strategy is not wholly focused on climate change, it does state the ambition to make Gloucestershire the greenest place to live and work in England, and the first place in the world to create a healthy circular economy.

³⁶ https://www.climateemergency.uk/blog/list-of-councils/

³⁷ https://www.uk100.org/campaigns/countryside-climate-network/

³⁸ https://www.gfirstlep.com/downloads/2020/gloucestershire_draft_local-industrial-strategy_2019updated.pdf

13 Appendix 3: Illustrative projects and actions

Priority action areas are broken into the Council's leverage areas – direct control, indirect control, place shaping, enabling and engaging.

The projects and actions listed here are illustrative only, and specific project plans will be brought forward through a separate report.

13.1 Indicative direct control action areas

13.1.1 Waste fleet

This is a very hard nut to crack. The Cotswold district covers 450 square miles, with a population of about 90,000. One of CDC's statutory duties is the collection (although not disposal) of domestic waste. Electric vehicles to collect household waste are at an early stage of development, but at present are around three times more expensive and only work in high density environments where routes are short.

Innovation is happening at a fast pace, but it is not yet clear what winning technology will emerge for the replacement of heavy, medium- to long-distance diesel vehicles like refuse trucks. Rural districts like the Cotswolds therefore present a big challenge to emissions reduction in waste fleets. The Council will work actively with the waste collection contractor Ubico (part-owned by CDC) to continue to explore options initially for incremental emission improvements, and as soon as possible, more radical and complete solutions.

Cotswold district is an important exemplar for other rural districts. Our per km² emissions are the lowest of all Gloucestershire districts, reflecting our low population density, and the distance our waste collection lorries have to travel. Cotswold therefore represents a valuable opportunity to pilot solutions as soon as they become viable.

13.1.2 Affordable housing

Delivering genuinely affordable housing is one of the Council's high priorities, along with the commitment to ensuring that all new CDC public buildings, and all residential and commercial developments on CDC disposed land, will be carbon neutral throughout their entire lifespan.

Affordability needs to encompass not just the cost to build or buy, but residents' total lifetime running costs. Low running costs can be delivered through high energy efficiency and zero carbon design, which will cost more to build than poorer specification homes. Whilst national policy does not demand it, increasing numbers of homes are being built to net zero carbon standards, and the techniques and technologies required to achieve this benchmark are evolving quickly and falling in cost, as the industry scales up its capacity.

The Council will have limited opportunities for such development, but where possible, and in keeping with the aim of providing leadership, will showcase developments to use as exemplars for other rural authorities.

13.1.3 Data and carbon reporting

Annual reporting of CDC emissions can be made more complete by increasing the data capture from some 'scope 3' categories, notably on staff commuting. Presently staff commuting emissions are not captured, and we will look at efficient and effective ways of capturing this data.

13.1.4 Staff knowledge, training, support and working practices

Action is already being taken to develop and roll-out a programme of information and training which will bring all staff up to a level of understanding of the science of climate change, the risks it brings, the means of reducing emissions, and the role of the council. Excellent examples exist of training programmes that can be replicated at CDC. The challenge is to bring climate literacy up to the level of organisational commitment and universal coverage that we see in, for example, health and safety or safeguarding.

There are existing incentives for staff to buy bikes and electric cars, and these can be promoted more widely.

The Council already encourages car sharing and planning meetings to minimise travel. There are good example policies developed by national agencies and adopted by other public sector bodies that can be borrowed to enhance our 'grey fleet' (private car use) policy to ensure that we are minimising emissions from travel round the district.

Publica's agile working strategy, developed in the light of the Covid-19 working from home requirement, will deliver valuable carbon savings from avoided commuting³⁹.

13.1.5 Trinity Road

Gas and electricity consumption at Trinity Road are the largest emitters within the council's direct control (excluding waste fleet and leisure centres). Good work has been done in recent years to improve energy efficiency through eg controls and lighting upgrades, and some opportunity exists for additional small scale projects to improve energy efficiency with a reasonable payback period, but now significant further progress can only be made with more fundamental changes and investments.

Turning Trinity Road into a true zero carbon office space is, just, technically feasible, but would be enormously expensive and disruptive, given the intrinsic structure and energy performance of the Victorian era property.

³⁹ IEA: https://www.iea.org/commentaries/working-from-home-can-save-energy-and-reduce-emissions-but-how-much

The Covid-19 crisis has introduced very significant short-term uncertainty on how to further tackle emissions at Trinity Road. Staff have largely worked from home during the crisis, reducing emissions from Council buildings. Publica's agile working strategy will further reduce office occupancy over the longer term. An assessment has shown that a Trinity Road solar PV array of around 140kWp is feasible, but cannot be taken forward without more certainty about the medium and long term plan for future use of the building.

13.1.6 Energy projects at commercial and non-commercial sites

There may be opportunities for refurbishment of energy systems (eg boilers, lighting, controls, certain fabric measures) on some of the commercially-let CDC properties, irrespective of the terms of the leases. In the case of fully-repairing leases where the lessee has responsibility for the building's Energy Performance Certificate and for decisions on upgrading energy systems, it may be possible to take a coordinated approach to investing in energy performance improvement which benefits both CDC and the tenant.

Achieving net zero across the commercial estate will demand both a deep fabric-first refurbishment of the properties, to maximise thermal efficiency and make the property technically suitable for the installation of highly efficient electric heat pump heating. For the end result to be net zero carbon will require the tenant to purchase electricity from a guaranteed zero-carbon source. Changes will require partnership working with the tenant to achieve cost sharing.

If individual commercial properties prove impossible to bring up to net zero carbon standards, CDC could consider disposal, with the aim of purchasing or building an alternative building asset with a NZC performance, capable of yielding the same rental income.

There may be minor solar PV opportunities at other council-owned sites, for example storage depots, or containerised electricity storage at (eg) Trinity Rd (which has its own feeder substation). Note that storage is unlikely to be viable as a stand-alone project, but could become feasible if combined with other interventions. Small scale PV installations on (eg) depots, particularly where there is low site demand, are unlikely to be cost-effective unless power can be provided to an adjacent offtaker on commercial terms.

13.1.7 Major developments and investment projects

The Council has adopted a motion (Motion 9 of 2019/20)⁴⁰ committing itself to ensuring that all new CDC public buildings, and all residential and commercial developments on CDC disposed land, will be carbon neutral throughout their entire lifespan (with Gloucestershire-based carbon offsetting as required).

This commitment binds the Council for developments it takes forward, and will influence any investment or co-investment opportunities that come forward.

⁴⁰ https://tinyurl.com/yyqb4pzr

The Council will seek commercial investment and co-investment opportunities, ideally within the district, for projects such as renewable generation that deliver the low carbon objective, whilst also providing a suitable risk-reward balance.

13.1.8 Electric vehicles

The Council is developing an electric vehicle strategy that encompasses electric vehicle charging infrastructure for Council premises and public carparks, recognising that accelerating this fundamental technology shift will be one of the fastest ways to decarbonise transport.

13.1.9 Leisure centres

Cirencester leisure centre already has good energy efficiency, but a planned survey is likely to show that some further improvement is possible, albeit at a higher cost since many of the 'easy wins' have already been taken. An initial assessment has shown the potential for around 300kWp PV generation on the Cirencester leisure centre and around 70kWp at Bourton.

A half hourly electricity consumption analysis at Cirencester shows that sizing a PV array to supply only on-site instantaneous consumption limits the installation to around 120-150kWp in order to maximise economic return. However for both Cirencester and Bourton it may be possible to increase the size of the installation and sustain or enhance the returns through collaboration with nearby electricity consumers, battery storage, electric vehicle charging and other initiatives.

Complex multi-component and multi-party projects of this kind require some certainty over the long term power demand, and this needs to be evaluated in the context of emerging from the Covid-19 crisis.

13.2 Indicative indirect control action areas

13.2.1 Sustainable procurement, commissioning

The Climate Emergency Declaration contains the commitment to require all suppliers to the Council to declare the carbon intensity of the goods or services, and for the Council to incorporate this as a decision factor. Procurement policies will be updated to incorporate this requirement.

13.2.2 Renewable electricity procurement

The Council's current electricity supply is 100% renewable, as evidenced by certificates linked to renewable generation, but not evidenced by direct contracts with generators. From a corporate carbon reporting viewpoint, and drawing on established best practice, this does not count as 'location based' 100% green electricity. Purchasing electricity based on contracts with generators, and linking the supply to the real-time renewable generation, does permit the Council to claim zero carbon status for the electricity, and this will be explored at the next available contract break point.

13.2.3 Staff commuting and home working

The Council's carbon data gathering will be extended to capture commuting emissions, and the data used to help inform staff of the cost and carbon saving opportunity of avoiding these emissions by moving to active travel and taking advantage of incentives for electric vehicle ownership.

As Publica's agile working policy becomes embedded, the Council will provide advice to employees on how to save energy and carbon from home working, particularly in the winter where home heating emissions will rise.

13.2.4 Co-investment in capital projects

The Council will seek opportunities to co-invest in renewable energy and other carbon-reducing projects which meet a range of risk and return criteria. Where the Council is a junior party in a multi-party investment, we will use our influence to ensure the biggest carbon benefit is delivered, ideally alongside other Council priorities.

13.3 Indicative place shaping action areas

13.3.1 Transport

The Council is committed to producing a district-wide sustainable transport strategy, which will seek to deliver multiple benefits not just in carbon reduction but in increasing active travel, improving health and air quality, and introducing new ways for Cotswold residents to access services.

13.3.2 Renewable energy strategy

Whilst the district has the *emissions* disadvantage of a large area and dispersed, low density settlements, its land area can be an emissions advantage if land is used in ways that protect and increase carbon stored in soils and standing biomass, and generates sustainable energy.

The Council is commissioning consultants to produce a renewable energy strategy that will be incorporated into the revision to the Local Plan. The strategy will take account of all opportunities and constraints (such as landscape constraints in the AONB), and propose ways to maximise renewable generation in the district, consistent with those constraints and with the declaration of a climate emergency.

13.3.3 Economic development

The Council's economic development strategy and plans will incorporate climate change to ensure consistency between the objectives.

13.3.4 Local plan review

The Council has begun its review of the Local Plan, consistent with the Council's priority to make the Local Plan 'green to the core'. The renewable energy strategy is a key part of this, but all other aspects of the Local Plan policies, particularly relating to sustainability criteria for housing and infrastructure developments, will be examined through the lens of the climate emergency.

13.4 Indicative enabling action areas

13.4.1 Promoting and supporting electric vehicle use

The largest source of emissions in the district is from road transport, much of it by people living outside the district but travelling through. This is the hardest nut to crack, since CDC's control and influence is minimal. Nonetheless CDC can play a valuable role in promotion and facilitation of residents making the move to electric vehicles through a district-wide electric vehicle strategy which works with other parties to rapidly install EVCP infrastructure, and promote the use of EVs.

CDC has an opportunity to link car park charging to vehicle emissions, as has been successfully done in some London boroughs.

A growing number of initiatives and options are available for towns and neighbourhoods to access low carbon technology, and many more will come forward during the decade. One current example is CoCars – a not-for-profit social enterprise car club based in Exeter that rents electric cars by the hour. Such innovations can make zero carbon technology available to people who can't afford to join the electric vehicle revolution by owning their own vehicle.

Promotion and support of citizens moving to electric vehicle use will be integrated into the intended district-wide sustainable transport strategy and plans.

13.4.2 Supporting whole house energy retrofit

Retrofitting existing housing stock to bring it up to a near-net zero carbon standard is a key requirement for the District. Government has announced grants to support this, and the Council can proactively identify suitable low carbon interventions that would benefit Cotswold residents, and promote the grants scheme.

CDC may be able to take a role in providing due diligence, risk reduction and confidence building for early adopter owner occupiers by working with established suppliers to bring a housing retrofit solution (ie, contractor due diligence, objective evaluation of needs, contracting platform, etc) to the District. It may be possible to coordinate this with social housing providers to help scale faster, improve efficiency and reduce costs.

Such retrofit works will normally entail fabric improvement (insulation, airtightness) coupled to ventilation, heating system and controls. The main candidate technology for zero carbon domestic heating is air source heatpumps.

A key consideration for the District is the control of any retrofit works that affect the external appearance of buildings. Specific (more expensive) solutions will be required for period or historic houses. In order to maximise the employment benefits for the District CDC could help coordinate links between local colleges and existing contractors in the District, to promote apprenticeship schemes. If retrofit is done at scale it ought to create business opportunities for existing firms in the District.

It may increase the effectiveness of the scheme if it has its own District-specific brand / identity, making messaging more effective. It may be possible to work with established lenders to arrange a financing facility, in recognition of the established fact that owners of very high (energy) performance homes have a low mortgage default rate.

The Council may be able to support homeowners to access government support for energy retrofit actions by quality assuring and signposting homeowners to sources of advice.

13.4.3 Supporting renewable electricity switching

It may be possible to roll out a bulk electricity tariff switching offer to residents, in conjunction with a carefully chosen partner. To make an impact on carbon emissions the tariff(s) would have to be 100% additional renewable supply. The Council can undertake due diligence to determine compliant suppliers, and can furthermore promote tariffs that support community-owned renewable energy generation.

Depending on their existing tariffs, some residents may be able to make a slight saving, but 100% genuine green tariffs are more expensive than those that compete solely on price. In principle it may be possible for CDC to recoup some costs through a customer acquisition fee, which could be used to fund specific climate projects.

13.4.4 Facilitating community-owned renewable energy

Ensuring residents get involved in climate and nature protection, and inviting residents to take a leadership role, will be vital to the long term objective of achieving a net zero carbon District. A key plank of such a transition is likely to be community ownership of, and investment in, renewable energy and other carbon reduction solutions. Research consistently shows that local people feel differently, and much more positively, about necessary renewable developments when they have a real say, and when they and their communities are in charge and directly benefit.

Done well, community energy organisations can have a reach well beyond the initial investors. Good examples to look to include Oxfordshire's Low Carbon Hub, Bath and West Community Energy, and Plymouth Energy Community. All three have close working relationships with councils.

The Council may be able to take a proactive role in facilitating the creation of a new entity, perhaps Cotswold Community Energy Ltd, probably with an independent Community Benefit Society structure (a form of co-operative). The Council could, in principle, then co-invest in schemes alongside community shareholders.

13.4.5 Solar neighbourhoods

Neighbourhood-wide PV bulk purchasing is well established. Developing and promoting a scheme could be (depending on the route chosen) a (relatively) low effort action for CDC. Households would contacted, with CDC branding, and invited to express interest in taking part in a reduced-cost solar installation scheme. When sufficient have expressed interest, the chosen contractor arranges surveys, and a firm price is offered to each household, without obligation. Significant cost reductions can be achieved compared to the open market, and more importantly, residents can have much greater confidence in the product, installer, warranties etc, due to the due diligence undertaken by CDC.

This approach targets the able-to-pay segment, not fuel-poor residents. It is a simple intervention, but CDC could work with the enabling company to brand the initiative and give it greater local relevance. One potential aspect of this is to push in-roof installations, rather than on-roof installations. The former are less visually intrusive, have more resistance to wind uplift, and may be more fitting for a District with high landscape value and pride in its historic built environment.

CDC could take a leadership role, ensuring maximum local employment value by linking the scheme to local quality-assured contractors / installers. It is relatively easy for CDC to implement (easy as in time consuming, but not complex and un-manageable), and has the benefit of demonstrating early action. CDC could lead a District-wide programme broken down by town and/or neighbourhood. A clear offer to residents would guarantee on price, quality and energy yield. It would be possible to link installations to advice on complementary supply tariffs and hot water storage or battery storage, to maximise benefits. Installations could be packaged up with domestic electric vehicle charging installation, again to maximise PV benefit.

13.4.6 Multi-stakeholder energy projects

Energy projects may be possible, enabled by the Council's ownership of land and buildings, which link together multiple buildings and their occupiers / owners, with a combination of PV generation, behind-the-meter supply, electric vehicle charging, high efficiency heat pump heating, energy and heat storage, and smart controls such as time of use tariffs and demand side management. Such schemes could be viable at a number of town centre sites, but will require considerable innovation in commercial structures, financing, legals and technology integration in order to succeed.

The energy market and commercially available technologies are both fast-moving. Bringing several complementary technologies together can achieve viability where isolated technology applications alone do not. Larger scale projects can benefit from improved economics, however multi-site, multi-stakeholder projects carry the additional burden of complexity, which increases project risk.

We will explore opportunities for innovative schemes, taking a cost-effective incremental route to exploring viability and building momentum.

13.5 Indicative engagement action areas

13.5.1 Supporting citizen led initiatives

Examples of highly successful initiatives that have been rolled out at scale elsewhere include the Green Open Homes network (peer mentoring and encouragement of homeowners wanting to make energy improvements), domestic electric vehicle chargepoint sharing platforms such as Chargie, and peer mentoring for new electric vehicle drivers.

13.5.2 Climate communications strategy

The Council will develop a communications and engagement strategy, and integrate all actions into it. It is likely to be beneficial to adopt a proven digital democracy platform to enable dialogue to take place, and this will be integrated into the Council's other consultation actions.

13.5.3 Signposting information and resources

The Council will develop climate communications through its web sites and social media, and signpost resources to guide citizens to the best quality information, to build confidence and the commitment to act.

13.5.4 Engaging key stakeholders

The Council will develop further its engagement with key stakeholders in the district whose own actions and whose influence on others will have important climate change outcomes. Such stakeholders would include statutory and non-statutory bodies, pressure groups, landowners and developers, other authorities, and public sector and private sector organisations.

13.5.5 District wide carbon reduction target

The Council will undertake its own research and commission consultancy support if necessary, to establish a rational, evidence based but stretching district-wide carbon reduction target and pathways. The target will be used in climate engagement work, as a means to open conversations and encourage greater commitment to action. The target can be used to show all stakeholders that the UK's national target (net zero by 2050) is too little too late, measured against the scale and speed of change we need to achieve. It will furthermore prompt challenging discussions about how to achieve fairness and the equitable distribution of the burdens and benefits of action.

13.5.6 Climate panel

The Declaration calls for the creation of a District-wide Climate Panel. This idea will be developed in the context of an overarching engagement and communications strategy, with the potential to use a citizens' panel as part of the oversight and governance of the Council's climate strategy. It is unlikely to be cost effective to develop a full

13.5.7 Town and Parish Councils

The Council will engage consistently with TCs and PCs, not least through climate action planning days. TCs and PCs will be able to play an important role in convening local citizens, generating local ideas and understanding the place-specific needs of residents.

14 Appendix 4: Summary of CDC's Climate Emergency Declaration

- The Council's own activities to be net-zero carbon ASAP, aiming for 80% reduction against 1994 baseline by 2030 and 100% reduction by 2045, no reliance on offsetting or allowance trading;
- o 100% clean energy use across the Council as soon as possible, no later than 2030;
- Delivery plan by July 2020;
- CDC and Publica to embed climate emergency considerations in all work areas and decision processes;
- Ensure climate change and environment scrutiny of all policy;
- Appoint manager to give senior support to CDC to embed climate-friendly working practices, coordinate strategy and policy development;
- Training for all CDC and Publica staff to ensure climate change consideration is part of all decisions and all roles;
- Review the adopted Local Plan, ensure climate change is a strategic priority for all planning and new development, introduce SPDs as necessary, create greater ambition for renewable energy generation, storage, housing energy efficiency, green infrastructure, sustainable drainage, and low-carbon transport;
- Oblige all CDC and Publica contractors to report carbon emissions; use carbon / environmental cost as key criterion in contractor selection;
- Publicly report investments (pensions, other) in fossil fuel industry shares; review investment strategies and ensure climate change has due consideration;
- Provide climate emergency leadership in the District; work with and influence partners;
 develop partnership working aimed at a zero carbon future;
- Establish a climate change panel (Councillors, residents, young citizens, climate scientists, solutions experts, businesses, others) to shape and promote a District-wide zero carbon strategy; maximise health / employment / wellbeing benefits across all sectors;
- Call on UK government to provide the powers, resources and assistance to deliver these objectives; call on relevant MPs to help;
- Enact a no-fly rule for Council business in the EU; flights outside EU require cabinet member approval.