



Figure 1



Dorset  
Council

# CLIMATE & ECOLOGICAL EMERGENCY STRATEGY

DRAFT for consultation | 15 JULY 2020

# CONTENTS

---

FOREWORD	1	BUILDINGS	28
GLOSSARY	3	FOOD & DRINK	31
INTRODUCTION	4	ECONOMY	34
OUR APPROACH	5	WASTE	37
THE CLIMATE EMERGENCY	11	WATER	40
THE ECOLOGICAL EMERGENCY	13	NATURAL ASSETS	43
ACTION AGAINST CLIMATE CHANGE	16	TRANSPORT	46
CARBON EMISSIONS & ACHIEVING NET ZERO	18	MAKING IT HAPPEN	49
CARBON BUDGETS: PATHWAYS & TRAJECTORIES	21	YOUR IDEAS	53
AREAS FOR ACTION	23	NEXT STEPS	57
RENEWABLE ENERGY	25	REFERENCES	59

# FOREWORD



Back in May 2019, one of the first actions of the newly formed Dorset Council was to declare a Climate Emergency, acknowledging that the Council needs to act on the causes and impacts of climate change. In November 2019, this was updated to a Climate and Ecological Emergency so that the protection and enhancement of Dorset's natural environment and wildlife biodiversity is also considered in our climate emergency mitigation work.

To monitor and strategically guide this work, Dorset Council formed the Climate Change and Ecological Emergency Executive Advisory Panel. Made up of elected members from different political parties, the Panel is responsible for gathering information and working with officers to make recommendations to Dorset Council's Cabinet on actions that will help mitigate against climate change. They have also met with various organisations to hear their evidence and ideas on how Dorset Council can help reduce the environmental impact of its own services, as well as support Dorset communities to do the same.

Since the Climate Emergency declaration was made, Dorset Council has recruited and employed full-time Corporate Sustainability Officers to lead and coordinate our response. They have also distributed somewhere in the region of £1.8m in Low Carbon Dorset Grants and secured around £10.5m from the Transforming Cities fund to create new active travel walking and cycling routes over the next 3 years. As well as securing a certified 'green' renewable energy tariff for electricity supply from September 2020.

As I've stated before, while other councils around the country may have chosen to set deadlines for carbon reduction and then work out

how they'll achieve them, I've always wanted us to do the investigation and information-gathering first before setting out our strategy.

This ensures that our action plan and timetable is both realistic and achievable, as well as ambitious.

This strategy brings together a considerable amount of work, made more challenging due to a lack of comparable data as a result of Local Government Reorganisation and recommends areas for action that will deliver a realistic and achievable approach to ensuring Dorset Council is carbon-neutral by 2040, ahead of the UK government target. Carbon reduction targets towards this are presented in the strategy as an approach to ongoing monitoring and annual evaluation of progress to ensure the pathway to carbon neutrality stays on track whilst also being adaptable to benefit from future funding opportunities and technologies

This strategy was finalised during the COVID-19 lockdown era when we have seen just what can be achieved when society pulls together behind an emergency situation and what positive change can occur when unilateral effort is focused on a shared outcome. The positive impacts on climate and ecological change brought about by the lockdown period, global CO<sub>2</sub> emissions dropped by approx. 17% to levels not seen since 2006. In Dorset, the significant drop in road traffic brought about an estimated 27% reduction in carbon emissions. This shows us as a society what is possible in a short time when "business as usual" is adjusted. We must not lose some of these gains and rush back to how things were before the pandemic.

# FOREWORD

---

The ambitions and actions set out in this strategy must be viewed alongside the financial pressures that are facing not just Dorset Council but all Local Authorities, exacerbated at the current time by the additional pressures brought about by Dorset Council's response to the COVID-19 pandemic. Whilst this strategy illustrates it will be possible to tackle the low hanging fruit and combine carbon-reducing actions with other priorities - placing climate change response at the front and centre of our wider priorities - there will still be a need for imaginative and innovative solutions working in partnership with central government and the private sector.

**Councillor Ray Bryan**  
Cabinet Portfolio Holder  
Highways, Travel and Environment



# GLOSSARY

<b>Business as usual (BAU)</b>	Future emissions trend if the current state of affairs continue as they are today.	<b>Greenhouse gas (GHG)</b>	The Earth can maintain a regular average temperature (about 15°C), despite heat leaving the planet's surface. This is because a layer of gases in the atmosphere absorb and release heat – a process known as the greenhouse effect. Greenhouse gases are those that have this effect, each with differing lifetimes and abilities to capture heat (infrared radiation).
<b>Carbon budget</b>	The cumulative amount of carbon dioxide (CO <sub>2</sub> ) that can be emitted over a period of time to keep within a certain threshold	<b>Resilience</b>	The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner - through ensuring the preservation, restoration, or improvement of its essential basic structures and functions.
<b>Carbon dioxide equivalent (CO<sub>2</sub>e)</b>	CO <sub>2</sub> e, or carbon dioxide equivalent, is a standard unit used to measure carbon footprints. It presents the impact of different greenhouse gases in terms of the amount of CO <sub>2</sub> that would create the same amount of warming, thus allowing one figure to be used. CO <sub>2</sub> is used as this is the most prevalent greenhouse gas.	<b>Carbon sequestration</b>	A natural or artificial process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form.
<b>Carbon neutral</b>	Having no net release of carbon dioxide into the atmosphere.	<b>Natural assets / capital</b>	The stocks of environmental resources that are vital for the physical wellbeing of the population - such as clean air and water, biodiversity, natural flood protection, and healthy soils.
<b>Climate change</b>	The long-term change of climate typically measured over decades or longer. This is different to weather, which is short-timescale variations.	<b>LEP</b>	Local Enterprise Partnership
<b>Carbon Offsetting</b>	Practices and technologies to neutralise remaining emissions that cannot be stopped entirely at source.	<b>AONB</b>	Area of Outstanding Natural Beauty
<b>Mitigation</b>	Preventing climate change from getting worse by reducing our carbon dioxide emissions.	<b>LNP</b>	Local Nature Partnership
<b>EAP</b>	Executive Advisory Panel	<b>CCC</b>	Committee on Climate Change

# INTRODUCTION



Over recent years, scientific consensus has been building on the causes and scale of climate change. It now recognises that there is a rise in global temperatures caused by manmade sources of greenhouse gases. Recent reports note that we must act swiftly to cut emissions if we are to avoid the worst impacts of climate change, caused by global temperatures rising above 1.5 degrees. In addition, public concern about climate change and the future impact it may have on our communities, and furthermore the ecosystems upon which we rely, is rising. There is an urgent need to take decisive action in the limited time we have left to make a difference.

**“Right now, we are facing a man-made disaster of global scale. Our greatest threat in thousands of years... Climate Change”**

Sir David Attenborough

This is a national and global issue. However, Dorset will need to play our part. In response, Dorset Council declared a Climate and Ecological Emergency and have committed to becoming a carbon-neutral Council by 2040, and work with organisations and residents to help Dorset become a carbon-neutral County by 2050.

This is a mammoth task and the scale of the challenge should not be underestimated. It will require enormous investment to drive the fundamental changes required. Dorset Council recognises it has a key role to play in facilitating this change but, if we are to make this a reality, organisations and individuals will all have to play their part and work together to collaborate, share best practice, and take decisive action.

The average Dorset residents’ carbon footprint is 4.6 tonnes of CO<sub>2</sub>e per year, some of the lowest in the region. However, this will need to reduce to near zero by 2050, if not sooner. Therefore, we all need to think about how we travel, use energy, and water, and how we create waste and what we eat to achieve a carbon-neutral future.

The benefits of our actions will be great. We can stimulate Dorset’s local economy through growth in green jobs and buying local goods and services. In addition, we can work towards significantly improving our health and wellbeing as a result of more active travel, better diets, cleaner air, a greater connection with the natural world, and healthier, more affordable homes. This is as well as being more connected and vibrant local communities.

We are not starting from scratch. All the former Councils, which now form Dorset Council, had been working for many years to tackle climate change, improve the resilience of communities, and protect and enhance the biodiversity in Dorset in partnership with many organisations and communities. However, we recognise that we need a huge step-change in the scale.

This strategy builds upon this work and sets out some of the key challenges and issues we face and some of the important areas where we need to act. There is much we still do not know and changes in government policy and technology over the coming years will greatly affect what we all do. Therefore, this document needs to be dynamic and regularly reviewed. However, it is an initial road map that sets the direction and urgency of travel. With this strategy, we will consult residents, organisations, and partners, in order to further develop our plans and initiatives to achieve a carbon neutral Dorset.

# OUR APPROACH

## The Strategy

This document sets out the framework for action to become a carbon-neutral Council and the direction of travel needed for a County-wide approach. There will be many ways in which we can meet our goals and many technological and policy developments along the way. We will, therefore, need to remain flexible and review our strategy regularly to ensure we take account of the latest developments.

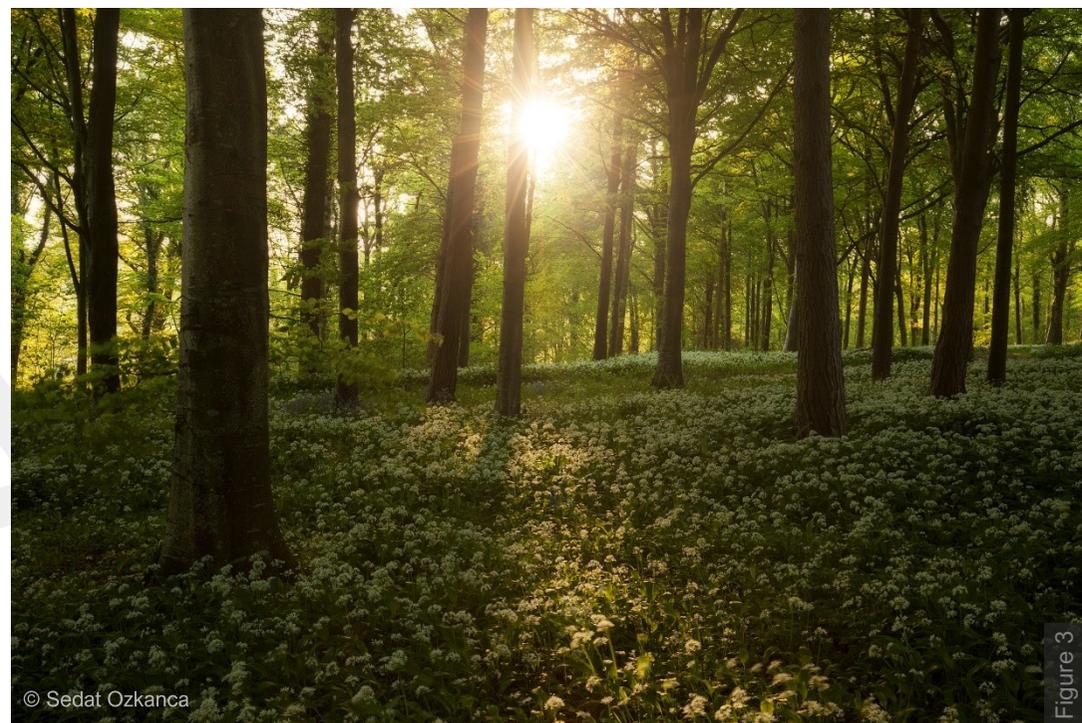


Figure 2

This document explores several topics where we know action needs to be taken. These include Transport, Buildings, Waste, Water, Natural Assets, Economy, and Food and Drink. A section on each of these topics sets out the key challenges and some suggested priority areas for action. From this strategy, we will be able to develop our own more detailed

action plan and engage with partners, organisations, and individuals to encourage wider action beyond Dorset Council. Each section is supported by a separate more detailed background paper, providing some of the wider context and rationale.

We will monitor and report progress annually against both our action



© Sedat Ozkanca

Figure 3

plan and carbon budgets and those of the wider County to ensure enough progress is being made or where greater focus is required to keep us on track. The strategy itself will be reviewed, either if it becomes clear that enough progress is not being made against the targets, or when the actions are largely complete and new ones need to be established.

## Dorset Council's role

We are committed to achieving a carbon-neutral Council by 2040 and must help facilitate the changes required to work towards the whole of Dorset becoming carbon-neutral by 2050.

However, we recognise that Dorset Council has only limited powers and responsibilities in many of the areas where action is required. Therefore, Dorset organisations and individuals will all need to act collectively to achieve this wider ambition.

The Council has three key roles in facilitating the change required and the strategy document is framed into these three key areas...

### Direct

Take **DIRECT** action to reduce our own carbon footprint in order to become a carbon-neutral Council by 2040, showing leadership as a large public sector organisation.

As a large organisation, we directly account for at least 1% of Dorset's footprint from our use of energy and water in our buildings and assets, staff travel, and the waste we produce.

### Indirect (through services)

Take **INDIRECT** action to facilitate change by ensuring the range of services we provide across the County are delivered in a way that supports our journey towards a Carbon Neutral County.

Dorset Council is responsible for the delivery of many key services, such as planning, housing, economic development, waste and transport, etc.

### Influence & Partnership

Work in **PARTNERSHIP** with other organisations and communities to drive change across the County and put in place larger programmes and projects to support fundamental change required.

For example - Working with Town and Parishes, community engagement, behaviour change, regional transport policy. This is as well as working with key partners and existing partnerships (LNP, LEP, AONB, Coast Forum etc.), therefore influencing key and sustainable energy strategies.

# OUR APPROACH



## Lobbying

Critically, much of what is required will need to be led by national government through clear policy and support programmes (including financial incentives). At present, the Climate Change Act sets a clear target for net zero by 2050. However, the Committee on Climate Change has highlighted that many areas of government policy do not yet align to achieve this, or set out a clear long-term approach, and in some cases act as barriers to action. Therefore, the policy will need to be aligned in several key areas to include housing standards, planning, building control, transport, waste, and energy.

**The Council has a key role in lobbying government for clear policy and financial support required for the transition to a zero-carbon future and to actively participate in national forums and consultations on policy development.**

## An integrated approach

Both the climate and ecological emergency are intrinsically interlinked, and both are crucial to our health and wellbeing. Changes in either will have knock-on effects on our physical health, sense of wellbeing, and safety. We rely on the natural systems for our very survival, such as food and energy, clean air, and water. However, our use of fossil fuels,

which leads to greenhouse gas emissions, is having an impact on the natural world, effecting ecosystems around the globe. By addressing one of these emergencies, we also address the other and we would wish to strive for integrated solutions.

We must also recognise that climate change is already happening and, even if we are successful in drastically curbing carbon emissions in Dorset, nationally and across the world, climate change will continue to impact on our lives. We therefore need to build resilience to current and future climate change as an integral part of our overall approach. Throughout this strategy, we highlight many of these issues and key areas of action that are required to adapt to climate change.

Our approach to achieving carbon neutrality must also be integrated within wider sustainability goals. Many of the actions required to tackle carbon emissions will have wider co-benefits, which will help to support and strengthen Dorset's local economy and address social issues, such as fuel poverty. This is in addition to having wider benefits for health and mental wellbeing, such as improving air quality, encouraging active travel, and encouraging healthy diets.

**“Only by addressing both ecosystems and climate do we stand a chance of safeguarding a stable planet for humanity’s future on Earth.”**

Prof Johan Rockström  
Potsdam Institute for Climate Impact Research in Germany

# OUR APPROACH

## Health & Wellbeing



Climate change poses numerous risks to health and wellbeing. The World Health Organisation estimates an increase of 250,000 excess deaths per year between 2030 and 2050, due to the impacts of climate change. These impacts include heat-related mortality, increases in diseases, such as dengue fever and malaria, increased respiratory illness, and mortality due to extreme weather events. Indirect health impacts include illness relating to food and water safety, under-nutrition related to food insecurity, skin cancer, and chronic kidney disease from dehydration.

The lesser-known and often overlooked effects of climate change include the impacts on mental health. Mental health refers not just to mental illness, but also includes states of emotional resilience and feelings of wellbeing. There is increasing evidence that extreme weather events, which are more frequent, intense, and complex under

a changing climate, can trigger mental health disorders. These disorders include post-traumatic stress disorder (PTSD), major depressive disorder (MDD), anxiety, depression, survivor guilt, substance abuse, and suicidal thoughts.

Incremental climate changes, such as rising temperatures, rising sea levels, and increased drought can disrupt food and water resources, weaken infrastructure, and give rise to financial and relationship stress. This is as well as increased risks of violence, aggression, and the displacement of entire communities.

### Impact of Climate Change on Physical, Mental, and Community Health

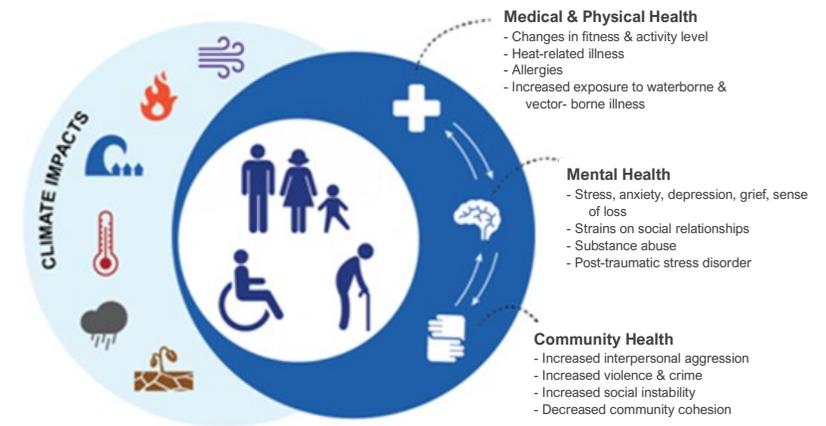


Figure 5

Paradoxically, these same disastrous implications may also inspire altruism, compassion, and optimism. In addition, it may also foster a sense of meaning and personal growth (otherwise referred to as post-traumatic growth), as people band together to salvage, rebuild, and console amongst the chaos and loss of a changing climate.

# OUR APPROACH

Health and wellbeing benefits are some of the largest potential gains from tackling the climate and ecological emergency.

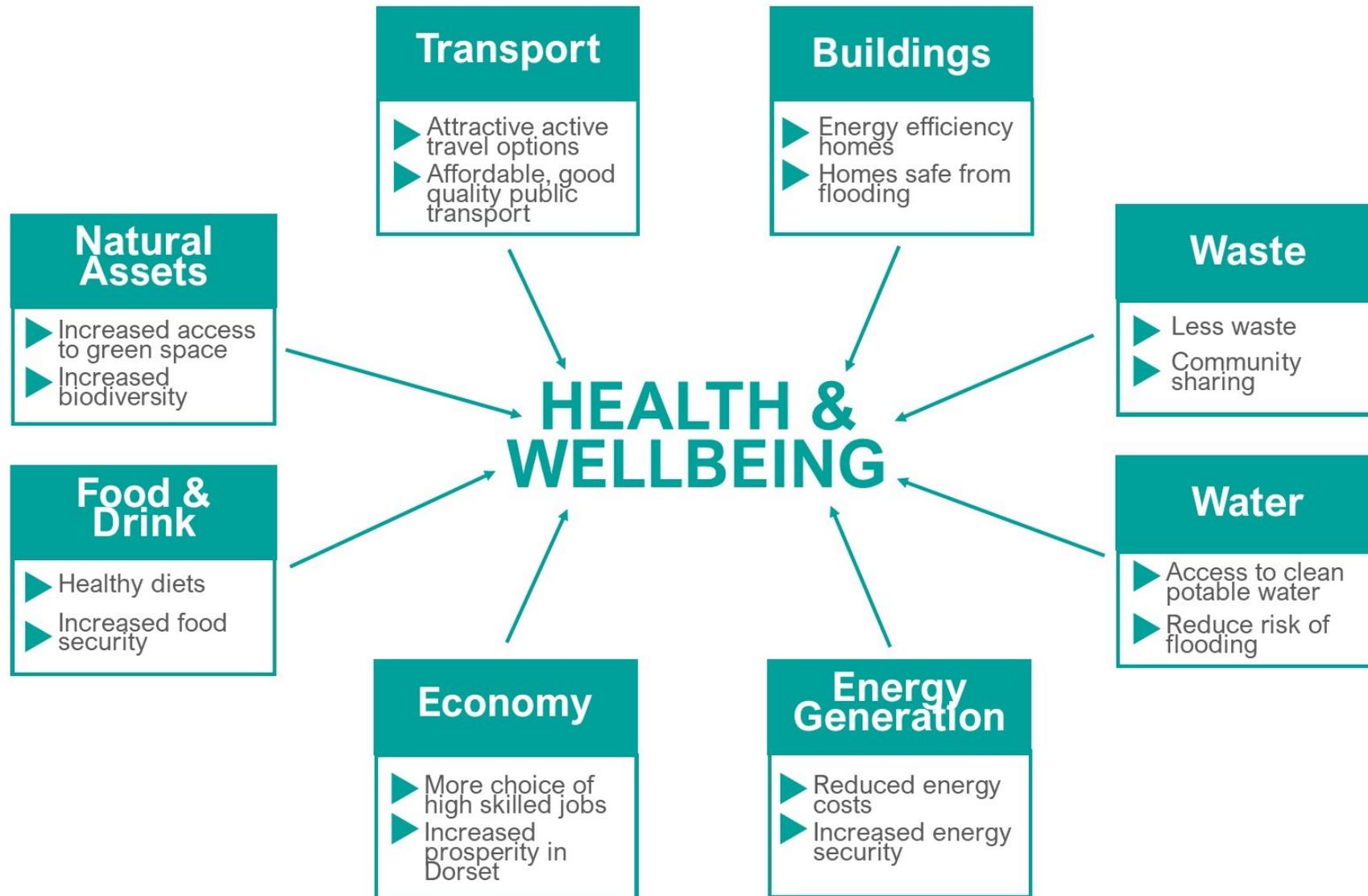


Figure 6

# OUR APPROACH

Good quality natural landscapes, which have a high ecological value, have also been shown to reduce stress and sadness, lift poor mood, and make us feel better, with the relationship being strongest for anxiety disorder and depression. People living in greener urban areas have significantly higher life satisfaction scores than those that live in less green areas. Exercising in green spaces is also associated with higher levels of mental health and wellbeing compared to indoor physical activity. Moreover, older people who engage in walking as a physical activity are less likely to develop dementia. Therefore, there is undoubtedly a positive relationship between improving biodiversity, quality of greenspace, and accessibility for health and wellbeing.



In terms of physical health, our use of our natural world, particularly greenspace, is associated with lower rates of disease, reduced risk of developing type 2 diabetes, and cardiovascular disease. People who frequently visit high quality green space are more likely to be physically active and less likely to be overweight or obese. From the ancient Japanese practice of shinrin-yoku (forest walking) to the Yorkshire industrialist Titus Salt's factory placement, the health benefits of green spaces have been known across the world for time immemorial.



# THE CLIMATE EMERGENCY

**“If we don’t take climate action, the collapse of our civilisations and the extinction of much of the world is on the horizon.”**

Sir David Attenborough

Climate change is a large-scale, long-term shift in the planet's weather patterns and average temperatures. It can happen naturally due to a variety of factors, such as changes in the Earth's orbit around the sun, the output of solar radiation, and geological activity. However, it is now acknowledged that human sources of emissions are partly responsible for the levels of greenhouse gases currently in the atmosphere. These concentrations are “extremely likely” to have been the dominant cause of the observed warming since the mid-20th century.

We are already experiencing a 1°C rise in average global temperatures since pre-industrial levels. In 2015, countries around the world signed the Paris Agreement with the aim of rapidly cutting greenhouse gas emissions in order to keep global warming below 2°C, while pursuing efforts to keep it below 1.5°C.

**Every degree matters** – Small changes in average global temperature will have a very large effect. The Intergovernmental Panel on Climate Change (IPCC) has since advised that, whilst a global warming of 1.5°C would lead to catastrophic impacts to health, livelihoods, food security, water supply, human security, and economic growth, these would be even worse at 2°C.

Within the UK, the government advisory panel on climate change, the Committee on Climate Change (CCC), has highlighted that the world's current emissions trajectory is likely to lead to a 4°C rise of global temperatures and that deep and rapid action is required. A 4°C rise would see significantly worse impacts and scientists are concerned that rising temperatures could lead to further releases of greenhouse gas emissions from natural sources. This, in addition to a reduction in polar ice caps may lead to ‘run away’ climate change.

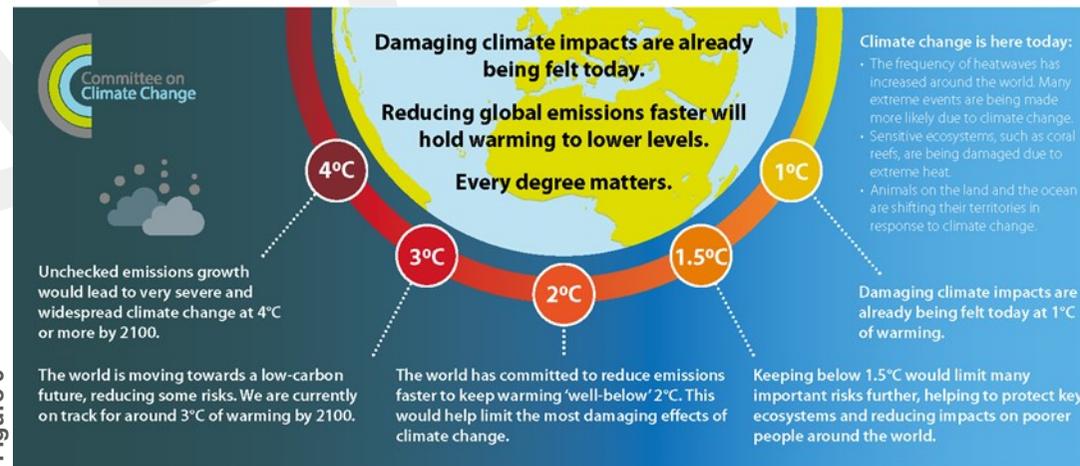


Figure 9

**Time is short** – We (the world) are emitting 55 billion tonnes of carbon dioxide equivalent per year. Scientists estimate that if we emitted no more than 580 billion tonnes, this would give us just a 50% chance of keeping within 1.5°C (420 billion tonnes would give us a 66% chance). Therefore, we have only 8-10 years at the current rate, within which serious action is required to avert this crisis and avoid the worst impacts.

## The impacts of climate change

Anthropogenic climate change is already happening. We are already seeing impacts, such as warmer temperatures with more heatwaves and less frost days, increased rainfall and flooding, and increased wind and storm intensities. This is as well as rising sea levels and temperatures, changes in biodiversity, increased range of pests and diseases, and changing seasons.

The Met Office has modelled the possible future climate in the UK, based on different patterns of emissions, between a scenario where we achieve rapid emission reduction to a business-as-usual scenario where we see continued increase in emissions. The scale of climate change impacts will depend on how successful the world is at curbing greenhouse gas emissions, but overall, the models predict -

- **AVERAGE TEMPERATURES WILL RISE** by between 1-7 degrees – with increased intensity and frequency of heat waves and hotter summers.
- **RAIN FALL PATTERNS WILL CHANGE** with warmer wetter winters and hotter drier summers. When it rains in summer, there will be more intense storms.
- **AVERAGE SEA LEVEL WILL RISE** by between 27-115cm in the Southwest by 2100 (with more later), significantly increasing risk to coastal communities and greater danger from storm surge or high tides.

The Committee on Climate Change identified the following six key areas of inter-related climate change risks for the UK as the most

important, due to their magnitude now and in the future.

- 1 FLOODING & COASTAL CHANGE RISKS TO COMMUNITIES, BUSINESSES, & INFRASTRUCTURE** - affecting property values, business revenues, and, in extreme cases, the viability of communities.
- 2 RISKS TO HEALTH, WELLBEING, AND PRODUCTIVITY FROM HIGH TEMPERATURES** – tripling premature heat-related deaths by the 2050s within an aging population
- 3 RISK OF SHORTAGES IN THE PUBLIC WATER SUPPLY, AND FOR AGRICULTURE, ENERGY GENERATION, AND INDUSTRY** – putting increasing pressure and competition on industry, farming, and the public water supply, and the ecological status of rivers, lakes, estuaries, and groundwater.
- 4 RISKS TO NATURAL CAPITAL, INCLUDING TERRESTRIAL, COASTAL, MARINE, AND FRESHWATER ECOSYSTEMS, SOILS AND BIODIVERSITY** – Impacting the UK's native wildlife and availability of the vital goods and services provided by natural capital, including food, timber and fibre, clean water, carbon storage, and the cultural benefits derived from landscapes.
- 5 RISKS TO DOMESTIC AND INTERNATIONAL FOOD PRODUCTION AND TRADE** – supply chains, leading to volatile food prices, and increasing the need for effective stewardship of natural resources here and overseas to maintain the resilience of the UK food system in the long-term.
- 6 NEW AND EMERGING PESTS AND DISEASES, AND INVASIVE NON-NATIVE SPECIES, AFFECTING PEOPLE, PLANTS, AND ANIMALS** - having widespread impacts on communities and economies, and are very expensive to manage once established.

# THE ECOLOGICAL EMERGENCY

“Ever since we arrived on this planet as a species, we’ve cut them down, dug them up, burnt them, and poisoned them. Today we’re doing so on a greater scale than ever.”

Sir David Attenborough

## Summary

Humans are part of nature and rely on natural systems, processes, and materials for existence. Most of nature’s contributions to people are not fully replaceable, and some are irreplaceable. Nature plays a critical role in providing food and feed, energy, medicines, and genetic resources, as well as a variety of materials fundamental for people’s physical wellbeing and for maintaining our culture.

The terminology of natural capital helps to describe our relationship with nature, our part within a natural world, and their inseparability. Natural assets are a way of describing the ‘hardware’ of nature. From these assets flow various ecosystem services that are essential to life and wellbeing.

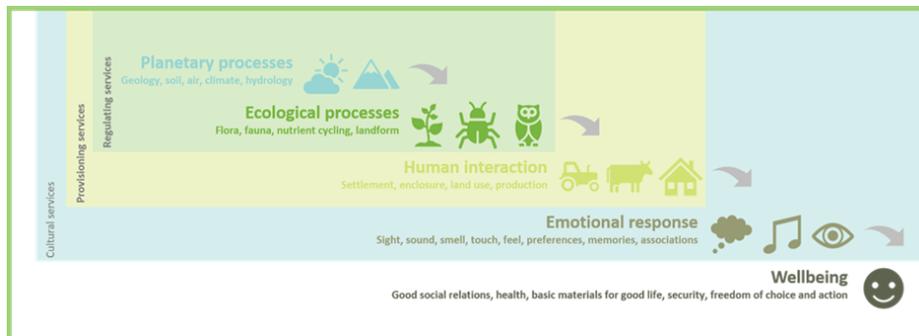


Figure 10

The ecological and climate emergencies are intertwined. Burning fossilised carbon is placing stress on the regulatory services provided by the ecosystem on the climate. Significant carbon dioxide released into the atmosphere is caused by land use change, which is also a key driver for ecological loss. Climate change is causing additional stress for many organisms which cannot adapt or migrate due to fragmented landscapes, which acts as a driver for further ecological loss.

We are entering a period of mass extinction, with a significant loss of species and a reduction in species diversity. The extinction rate has been rising steadily over the last few centuries (see Fig 11), which reflects the expansion of human settlement and land use change since the Industrial Revolution. There has been a sharp acceleration in the degradation of nature since the 1970s. This is in addition to a huge loss in abundance. In the UK, the total abundance of widespread butterfly species declined by 58% on farmed land between 2000 and 2009, despite a doubling in conservation spending. Clouds of certain butterflies, widely reported in living memory, are now reduced to small numbers.

In the UK, the total abundance of widespread butterfly species declined by 58% on farmed land between 2000 and 2009, despite a doubling in conservation spending. Clouds of certain butterflies, widely reported in living memory, are now reduced to small numbers.

Species loss (from Ceballos et al 2015)

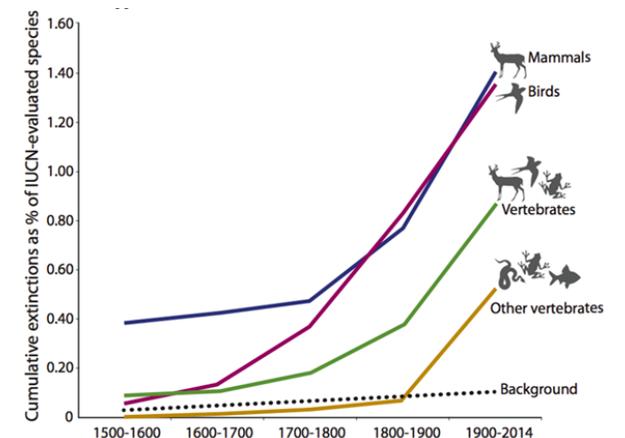


Figure 11

# THE ECOLOGICAL EMERGENCY

Dorset is a relatively wildlife-rich county, albeit in one of the most nature-depleted countries on earth. Complacency is easy when surrounded by apparent natural beauty, but this belies the scale of loss over the last 70 years. We have a responsibility to conserve that relative richness and enhance it, not only for the fabric of the natural environment, but for the health of our future economy. Bournemouth University studies have shown that of four future scenarios, ranging from high investment in nature recovery to high agricultural intensification, the highest economic returns are found by investing in nature.



## Key causes

Land use change is the prime driver. A huge loss of undisturbed ecosystems or wildlands occurred in this country in the Neolithic and Bronze Ages, as agricultural land use spread to feed growing populations. This process is still occurring across the world, most significantly in tropical rainforests. Another significant loss of semi-natural habitats occurred in this country during the Second World War and the decades which followed. For example, Dorset lost 71% of its chalk grassland and rough grazing between 1946 and 2002, largely due to agricultural intensification. As habitats are lost, key ecosystem services are compromised.

Ecosystems are also damaged by pollution from industry, agriculture, transport, and households. This ranges from the poorly understood effects of microplastics, which are now present at every place on Earth, to the toxicity of some agrochemicals.

Climate change, itself caused by a sort of pollution (excess atmospheric CO<sub>2</sub>), is also a driver of species loss, as migration across a landscape is hindered by fragmented ecological networks.



## The impacts of ecological decline

Biodiversity loss and ecosystem degradation causes impacts to the UK's native wildlife and availability of the vital goods and services provided by natural capital, including food, timber, and fibre, as well as clean water, carbon storage, and the cultural benefits derived from landscapes. Such losses exacerbate and amplify other observed risks, as regulatory and provisioning services become less effective. For instance:

### FLOODING

Urban, arable, and even pastureland cover commonly allows less rainfall to percolate into the soil, from where it would travel very slowly into streams, rivers, and the sea. This factor, combined with modified and canalised water-courses, causes water from intense rainfall events to end up in low-lying areas at speed, exacerbating flooding

### NOVEL PESTS & DISEASES

Rising base temperatures and the global movement of people, animals, and commodities are increasing the likelihood of novel pests and diseases appearing. Depleted local natural systems are less resilient and can suffer disproportionately. As an example, ash trees in diverse landscapes appear more resistant to ash dieback

### REDUCTION IN POLLINATING INSECTS

Four major UK crops are reliant on insect pollination (oil seed rape, field beans, apples, and strawberries). The first three are important in Dorset. On a national scale, wild pollinator contribution to these crops is valued at £690M/yr. This value and the food crops that it represents are at threat from rapidly falling insect populations

### REDUCTION IN PEOPLE'S EMOTIONAL CONNECTION TO NATURE

Nature depletion is also making it harder for people to connect with nature. Forming an emotional connection with nature and retaining memories of the enjoyment of nature are important factors in maintaining mental health. It is also an important determinant in forming pro-environmental behaviour, essential for the wellbeing of future generations.



Figure 14

# ACTION AGAINST CLIMATE CHANGE

## International Action

As climate change is a global issue, international action is needed. In 1992, the United Nations Framework Convention on Climate Change was signed by 189 countries at the Earth Summit in Rio. However, it failed to set binding targets and has therefore had limited effect.

As a result of the Kyoto Protocol, developed in 1997, 37 countries reduced global emissions by over 10% (the UK achieved a 12% reduction). However, this was not enough to offset the increasing emissions from other industrialising countries, which meant global emissions grew over the same period.

In 2015, every country in the world signed the Paris Agreement, the first truly global effort to reduce carbon emissions, which aims to rapidly cut greenhouse gas emissions, particularly carbon dioxide, to keep global warming below 2°C.

In 2018, the Intergovernmental Panel on Climate Change published a report which suggested that we could limit global warming to 1.5°C, and that the previous target of 2°C would have catastrophic impacts to health, livelihoods, food security, water supply, human security, and economic growth. It warned that the world could potentially hit the 1.5°C warming by 2030 if emissions carry on as they are (though this date could be as late as 2052) and that serious, large-scale action is urgently needed in the short term if we are to have any chance of avoiding a 1.5°C rise.

## How is the UK tackling climate change?

The UK was the first country to set legally binding carbon-reduction targets in the 2008 Climate Change Act, to cut greenhouse gas emissions by at least 80% by 2050 (from 1990 levels) and agree interim five-year 'carbon budgets' that take the country progressively towards that 80% target.



Figure 15

In May 2019, the Committee on Climate Change produced a report called Net Zero, recommending a new target for the UK to be net zero greenhouse gases by 2050, which could be achieved with known technologies and behavioural changes within the same budget allowed for the previous target. In June 2019, the updated target was legislated by the UK Government.

# ACTION AGAINST CLIMATE CHANGE

Reaching net zero emissions requires an annual reduction of emissions that is 50% higher than under the UK's previous 2050 target and 30% higher than achieved on average since 1990. This is an indication of how substantial the step up in action must be to cut emissions in every sector.

Such a step-change is only possible if clear, stable, and well-designed policies are introduced without delay. Currently, the policy framework is incomplete and contradictory. For example, the government says it wants people to cycle. However, councils can't afford to fill potholes. Meanwhile, trunk roads are getting a £30bn upgrade. Emissions from air travel are a significant contributor to GHG emissions. However, the government is expanding capacity at airports.

Similarly, there is a need to increase renewable energy generation, but policy virtually bans all new onshore wind farms which supply the UK's most cost-effective clean energy. Furthermore, incentives to install renewable technologies have been removed or greatly reduced. and disincentives, such as increase Business Rates for companies installing solar PV, have been added.

The Committee on Climate Change predict that the UK is on course to miss the next two carbon budgets due to a lack of clear policies (especially regarding heat), and regularly criticise the lack of action by the UK government.



Figure 16

# CARBON EMISSIONS & ACHIEVING NET-ZERO

## UK Carbon Emissions

In 2017, UK emissions were estimated to be 460.2 million tonnes of carbon dioxide equivalent (MtCO<sub>2</sub>e), a decrease of 2.7% compared to 2016. This decrease was mainly caused by:

- ▶ A reduction in emissions from the energy sector of 7.6%, due to a switch in fuel mix for electricity generation from coal and gas to renewables.
- ▶ A decrease of 4.2% in the residential sector, driven by a reduction in the use of natural gas for heating, due to warmer weather in the first half of 2017.

When broken down by end user, transport accounts for 31% of all emissions, with Business accounting for 27% and Residential for 22%. Agriculture, Waste Management, Exports and Other make up the remainder.

**Figure 2: Proportion of net greenhouse gas emissions in each end user sector, UK 2017**



Source: Table 3, Final UK greenhouse gas emissions national statistics 1990-2017 Excel data tables  
Note: Other includes Public, Industrial Processes and the Land Use, Land Use Change and Forestry (LULUCF) sectors (note that LULUCF acts as a net sink of emissions). The percentages may not sum to 100% due to rounding.

## County Wide Carbon Emissions

Emissions in Dorset follow a similar pattern to those of the UK, dropping from 2,500 ktCO<sub>2</sub>e in 2005 to 1,725 ktCO<sub>2</sub>e by 2017 (the most recent national data).

By sector, the emissions profile is like the national picture but with a smaller proportion of emissions from industry. Notably, emissions from heating are down 26% and electricity down 56%, which reduces the overall contribution from the industry and domestic sectors. These emissions have particularly fallen due to a major rise in renewable energy capacity in the UK over recent years and reduced use of coal, both contributing to a decarbonisation of the national grid.

In contrast, emissions from transport have only marginally decreased. Despite large gains in vehicle efficiency and clean technology, these gains have been offset by the increase in road traffic.

Emissions from agriculture in Dorset have also remained steady but the carbon sequestration effect of land use changes has grown effectively, balancing out these agricultural emissions. However, it is strongly suspected that this national data set is incomplete and that emissions from the agricultural sector are largely under-represented. Other areas in the South West have undertaken more detailed studies and discovered agriculture can account for over 10% of emissions of the area. Further work is required to estimate this for Dorset.

# CARBON EMISSIONS & ACHIEVING NET ZERO



Proportion of net greenhouse gas emissions in each end user (source BIES<sup>21</sup>)



Figure 18

Each person in Dorset has an average carbon footprint of 4.6 tCO<sub>2</sub>. This is less than comparator councils and the UK average of 5.3 tCO<sub>2</sub> / person.

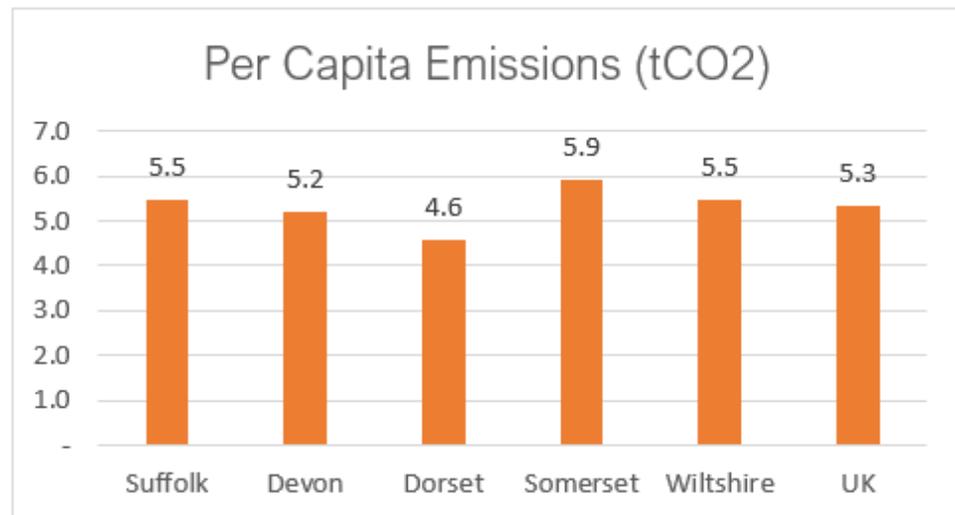


Figure 19

## Dorset Council Emissions

As a new unitary Council (only in existence since April 2019), no historic data is available to directly compare progress. However, each of the former local authorities now forming Dorset Council had carbon management programmes, which had recorded savings in the region of 10-15% since 2009. Major carbon reductions had been made in the areas of streetlighting, staff business travel, and fleet vehicle full use.

### Scope of baseline data

The baseline for measuring future progress will be financial year April 2019 – March 2020.

Dorset Council is one of the largest organisations in Dorset responsible for a wide range of services across the County and approximately 1% of Dorset’s carbon footprint. We own over 1,200 built assets, from office buildings, car parks, and hotels. This is as well as running a fleet of over 400 vehicles, from cars to heavy goods vehicles, and manage 40,000 streetlights and 4,000 signs. Many of our 9,000 staff would normally commute to and from work and use their cars for business, typically travelling over 5 million business miles a year. In addition, we work with partners and contractors to deliver key services, such as education and adult and social care.

All these activities create greenhouse gas emissions from our use of energy to power and heat our buildings, as well as fuel used in fleet vehicles. This is in addition to our use of water, the disposal of our waste, the electricity to power streetlights and our staff’s emissions outside of work.

# CARBON EMISSIONS & ACHIEVING NET ZERO

We have included in our carbon footprint all the carbon emissions that we have influence over. This includes:

- ▶ **DIRECT CONTROL** - emissions from our own operational buildings, business travel, fleet vehicles, and Dorset streetlights and road signs.
- ▶ **INDIRECT INFLUENCE** - emissions from the delivery of services, such as Adult Care buildings operated by Tricuro, Local Authority Schools, Leisure centres, and contracted out services, such as school transport and staff commuting.

## Dorset Council baseline emissions profile, initial breakdown 2019-2020

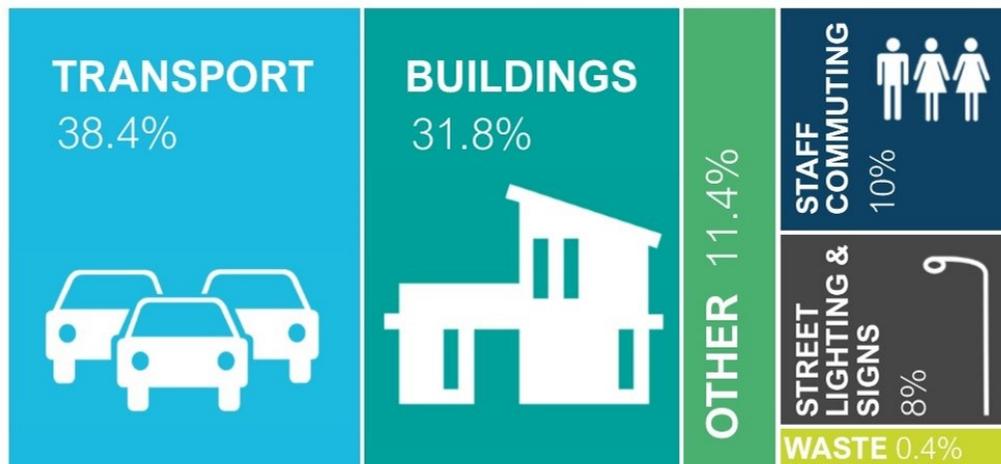


Figure 20

**Dorset Council's TOTAL Carbon footprint for 2019-2020 is estimated at 40,000 to 45,000 tCO<sub>2</sub>e.**

As a new authority we don't yet have enough data to give an accurate figure. But we can say that the footprint for 2019/20 was at least 33,704 tCO<sub>2</sub>e/yr. More data is needed on the Council's fleet fuel consumption and commuting figures to give a more complete representation.

In 2016 the County Council's footprint was recorded as 45,727 tCO<sub>2</sub>e/yr. But a direct comparison between this figure and today's footprint will not be very useful as what we are counting has changed - emissions from academies are no longer included, but school transport and highway maintenance are.

In all likelihood, our footprint will have dropped from the 2016 figure. Mainly because of the exclusion of academies and the reduction in the carbon intensity of the electricity grid. These factors are likely to have outweighed the additional emissions from an increase in Council staff and buildings during this period. We will have a clearer picture once more data has been gathered and sufficiently analysed.

# CARBON BUDGETS PATHWAYS & TRAJECTORIES

## Global & National Carbon Budget



Global Carbon Budget  
**420 giga (billion)  
tonnes CO<sub>2</sub>e<sup>3</sup>**

The International Panel of Climate Change (IPCC) has noted that we would have only a 66% chance of keeping global warming under 1.5°C, if the world kept to a global carbon budget of about 420 giga (i.e. billion) tonnes of greenhouse gases (tCO<sub>2</sub>e).

The world is currently emitting at around 55 billion tCO<sub>2</sub>e per year, which means that this budget of 420 billion tonnes would be used up in under eight years if nothing changes.

In 2008, the UK was the first country in the world to adopt legally binding emissions reduction targets of 80% by 2050 (compared to 1990 levels) and led to a series of five carbon budgets to 2032.

The target was upgraded to be net zero emissions by 2050, with a 100% reduction instead of 80%. In September 2020, the Committee on Climate Change will be advising on the 6th Carbon Budget (2033-37), which will be the first Carbon Budget set in line with this new net zero target. However, the Committee on Climate Change have warned that the UK is not on track to meet the fourth (2023-27) or fifth (2028-32) carbon budgets.

The target was upgraded to be net zero emissions by 2050, with a 100% reduction instead of 80%. In September 2020, the Committee on Climate Change will be advising on the 6th Carbon Budget (2033-37), which will be the first Carbon Budget set in line with this new net zero target. However, the Committee on Climate Change have warned that the UK is not on track to meet the fourth (2023-27) or fifth (2028-32) carbon budgets.

## Global & National Carbon Budget

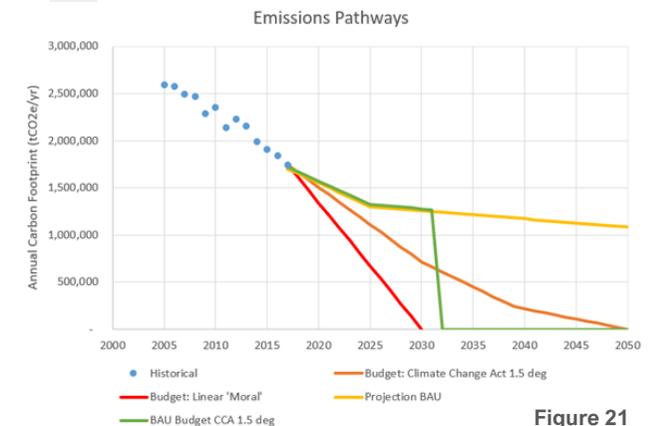
Based on the global carbon budget and scaling this by the population of Dorset gives us a budget of 21,000,000 tCO<sub>2</sub>e. In 2017, Dorset emitted a total of 1,745,000 tCO<sub>2</sub>e. Therefore, if Dorset continued to emit at the 2017 rate, we will have used our carbon budget up by 2030.

There are various pathways that could be followed.

Emissions have been reducing in recent years and are likely to have reduced in 2018, 2019, and 2020.

Given our historic performance, it does not appear overly challenging to follow the orange 1.5°C per-capita budget line (figure 21) to achieve a Carbon Neutral Dorset by 2050.

However, the challenge is more obvious when the current best-guess projection for the UK's emissions is scaled to Dorset and added (yellow line). This accounts for the UK having already picked low hanging fruit, such as reducing coal burning, investing in cheap efficiency measures, and adding renewable energy generation. Importantly, if Dorset continues to follow the UK's projected path, our emissions will have to follow the green trajectory in



# CARBON BUDGETS PATHWAYS & TRAJECTORIES

order to stay within our per-capita portion of the 1.5°C budget.

A considerable effort is going to be needed to stay on the orange 1.5°C per-capita budget pathway. This is going to require enormous changes to heat and transport, as well as accelerated changes to electricity generation. The county wide interim carbon budgets for this trajectory would need to be:

- ▶ **BY 2025** – (1,396,000 tCO<sub>2</sub>e) - 20% reduction
- ▶ **BY 2030** – (872, 500 tCO<sub>2</sub>e) - 50% reduction
- ▶ **BY 2040** – (349,000 tCO<sub>2</sub>e) - 80% reduction
- ▶ **BY 2050** – (Zero tCO<sub>2</sub>e) - 100% reduction

## Dorset Council's Carbon Budget

**Dorset Council only has control over the carbon emissions produced from its operations and this will be a key focus of our initial programme.**

We have no historic data for Dorset Council. However, by using the historic emissions of the Councils which combined to form Dorset Council, our best guess is in the region of 40,000 to 45,000 tonnes per year in the early part of the decade. Applying the UK predictions of future emissions (discussed above) to these figures, we can estimate the future 'Business as Usual' trajectory (yellow in figure 22), is the line we are most likely to follow if action remains at current levels. If we follow this trajectory the green line shows we will have used up our carbon budget by about 2030!

Scaling the emission pathway from the UK's 2050 target from the

Climate Change Act and remaining within its per-capita budget for a 1.5°C temperature rise suggests a minimum path Dorset Council could follow (shown by the blue line). We have chosen to set an earlier target by achieving a carbon neutral Council by 2040, this is shown by the black line. This will be our target trajectory against which we will monitor progress.

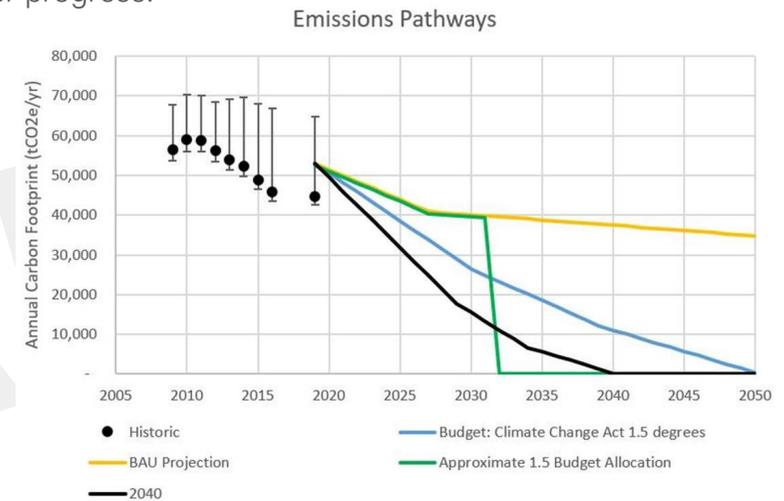


Figure 22

To achieve this Dorset Council will need to meet interim Carbon budgets of:

- ▶ **2025** 40% reduction
- ▶ **2030** 71% reduction
- ▶ **2035** 90% reduction
- ▶ **2040** 100% Carbon neutral

It should be noted that each of these Dorset Council emission pathways starts with estimated data. Once the full 2019/20 baseline has been determined more accurately, Dorset Council will be able to publish annual budget figures for each pathway, against which progress can be monitored.

# AREAS FOR ACTION

The member-led EAP required thorough investigation and information-gathering to ensure that the strategy produced by Dorset Council was factual and realistic. The primary actions were:

**Collate and analyse information from preceding councils to establish baseline data on Dorset Council and the wider Dorset Area regarding carbon emissions to establish an accurate as possible carbon footprint and identify areas for action**

Establishing an accurate baseline figure of current emissions of GHG and mitigation measures has been uniquely challenging for Dorset Council as a result of 2019 Local Government Re-Organisation. The 6 proceeding Councils recorded and retained information relating to carbon emissions and sustainability management in a variety of different ways to varying degrees of accuracy leading to considerable difficulties in forming an accurate current picture.

**Engage with partners, individual teams and the community to explore key issues, opportunities, identify progress and collate examples of national best practice.**

- ▶ A Dorset Council staff workshop was held in October 2019 to facilitate discussion of key issues, identify what was already underway and gather suggestions and ideas for further action

- ▶ Two Inquiry Days were held in February & March (2020) to enable organisations, community groups, individuals, school children and Dorset Youth Parliament to present their ideas to the Dorset Council Executive advisory Panel.
- ▶ Engagement with consultants, developers and energy suppliers to explore opportunities for Renewable energy in Dorset
- ▶ Input into major projects with aim of securing low-carbon design and develop policy (e.g Weymouth peninsula & building better lives programme)
- ▶ Engaged with Town and Parish Councils through a workshop in November 2019 and provided some guidance and ongoing support through Low Carbon Dorset programme
- ▶ Sought views from young people through direct representation to the Executive Advisory Panel in December 2019.
- ▶ Sought views from Dorset residents, via an online 'Call for Ideas' (December 19 to February 20) leading to nearly 800 responses

A summary of the ideas generated through engagement with local schools and communities through the 'call for ideas' process is detailed in the **Your Ideas** section at the end of this strategy.

# AREAS FOR ACTION

As a result of this evidence gathering eight key themes were identified and internal Task and Finish groups established to bring together technical experts and wider stakeholders.

**Renewable Energy** **Natural Assets**  
**Economy** **Food & Drink** **Water**  
**Buildings** **Transport**  
**Waste**

The theme-based Task and Finish groups were able to explore in more detail the national approach, scientific guidance, the relevance to Dorset Council and the Dorset area, and guide the creation of background technical papers to set out the information gathered and identify and contextualise areas for action.

Each technical paper briefly sets out not only the context but also the key issues and opportunities for action in each of the eight areas. Identifying objectives and areas where Dorset Council will seek to take action or work with wider partners.

Summary versions of these papers are detailed in the following sections, each with a link to the background technical paper. In addition to setting the background, they identify a number of actions which Dorset Council intends to progress and will form the basis for development of more detailed actions plans (see next steps below)...



# RENEWABLE ENERGY

## Scale of the challenge...

To address the climate emergency **all** energy currently provided by fossil fuels for heating, transport and electricity will need to come from a low-carbon source. This will need to be through electricity or hydrogen generated from renewable energy (solar, wind, hydro, biomass) or nuclear.

This will mean switching **all** heating to low-carbon alternatives such as biomass, heat pumps or hydrogen, and switching **all** transport to electric batteries or hydrogen. It will then require an enormous increase in renewable electricity generation and low-carbon hydrogen generation to meet the demand.

It will also be essential that we can store energy locally and manage our energy in a smarter way in order to meet peak energy demand and make the most of the renewable energy we produce.

Given the uncertainty about heating and hydrogen in national policy, it is difficult to estimate how much renewable energy will be needed to meet the challenge in Dorset. Under the greenest scenario, energy demand in the Dorset Council area will be around **4 billion kWh/yr**. So, for Dorset to play its fair share and generate 100% of its own energy demand, we will need around 4GW of solar (around 19,000 acres) or 2GW of wind (around 700 big turbines), or a combination of the two. Bournemouth, Christchurch and Poole Council will need as much again, if not more, and is unlikely to be able to fit it within its own boundaries.

For Dorset Council alone, it is estimated that we will need 60MW of solar PV (or 30MW of wind) to cover our own energy demand once efficiency measures have been taken. To ensure this demand is kept to a minimum improving the efficiency of our buildings will be critical.

## Dorset's progress so far...

-  Significant increase in installed renewable energy capacity in Dorset between 2010 to 2016 to 480 MW (around 10% of all Dorset Council area's energy demand)
-  1MW of renewable energy capacity installed on Dorset Council's estate and schools
-  The Dorset-Council-run ERDF-funded Low Carbon Dorset programme is currently encouraging (through advice and grants) the installation of 4 MW of renewable energy capacity across the Dorset Council and BCP areas
-  Bridport is currently hosting a volunteer-run pilot project, the first in England, to allow local trading of renewable energy



Hear more about the challenge we are facing both globally and in Dorset from Low Carbon Dorset's [Renewable Energy Technical Officer...](#)



## Key Issues...

- Nationally**
- **Uncertainty at national level** around key strategic decision & direction
  - **Electricity grid limited** in its ability to support deployment of renewable energy at scale needed
  - **Technology is still developing in some areas** (like EV infrastructure) to enable mass deployment
  - **Current policy framework** does not support the journey to a low carbon future
  - **Existing planning system** does not actively encourage renewable energy installations
- In Dorset**
- **Delivery at scale is required**, every opportunity to utilise renewable energy to meet current demand needs to be taken & large-scale deployment projects need to be developed
  - **Dorset Council's renewable energy capacity needs to increase** by a factor of 60 to meet demands
  - **Dorset county's renewable energy capacity needs to increase** by a factor of at least 8 to meet its own demands
  - **Decision makers within many organisations are not always aware** of renewable energy opportunities
  - **Deployment of onshore renewable energy stagnated** since 2016 due to planning restrictions imposed & removal of all subsidies
  - **Lack of financial incentives** in place to encourage investment in renewable energy
  - **Cases where small-scale renewable energy can offer good returns** need to be identified & promoted to local businesses

## Key Opportunities...

- **Largely untapped resource** of solar, onshore wind, offshore wind and tidal in Dorset
- **Increased energy security** possible through local low-carbon generation
- **Income stream** from generating our own renewable energy
- **Potential to attract investment** into Dorset's sustainable infrastructure
- **Potential reduction in energy costs** for local businesses & communities
- **Dorset Council's county farms could be exemplar test sites** for renewable energy generation
- **Biomass identified as a significant opportunity for Dorset** in Bournemouth Dorset & Poole Renewable Energy Strategy 2012
- **Financial benefits to transitioning** Dorset Council's entire estate and operations to zero carbon
- **Opportunity for DC to show leadership** and set an example



Figure 25

## Areas for Action...

Dorset Council cannot itself deploy the GigaWatts of renewable energy required at a Dorset-area level, and does not have control of national planning policy or the economics of renewable energy. But there are many things that the Council can do to facilitate the transition from the current state to a situation where Dorset supplies its own energy demands with renewable energy.

### Direct

-  Maximise renewable energy opportunities of all DC buildings; convert all off-grid buildings to heat pumps or biomass, convert heating of all on-grid buildings to hydrogen-ready hybrid heat pumps, install max capacity solar arrays on every building
-  Construct large renewable energy installation (around 60 MW of solar PV or 30 MW of wind turbines) on Council owned land to meet Council's demand
-  Commission study to identify opportunities for renewable energy in County Farms and Council carparks
-  Work with renewable energy developers in Dorset to secure new renewable energy generation to meet (and exceed) needs of the Council

### Indirect (through services)

-  As Local Planning Authority – actively encourage renewable energy deployment
-  Undertake detailed resource mapping to confirm Dorset has the technical resources to be self-sufficient. Potential sites can then be identified in the Local Plan
-  Produce a supplementary planning policy to insist upon renewable energy being integrated into all new buildings—unless the Future Homes Standard prohibits it

### Influence & Partnership

-  Lobby central government over the major hurdles to renewable energy deployment, the Navitus Bay decision, investment needed on grid infrastructure, and future of heat
-  Work in partnership with BCP to plan a zero-carbon energy system for Dorset
-  Dedicated resources to promote renewable heat in cases where it is financially viable
-  Extend Low Carbon Dorset programme
-  Dedicated resources to assisting with the expansion and awareness building of the Energy Local project in Dorset
-  A review of whether Council run fuel-poverty schemes could install low-carbon heating systems over gas boilers



# BUILDINGS & ASSETS

## Scale of the challenge...

Carbon emissions from Dorset's buildings currently account for about 60% of the county's footprint, with around **1 million tonnes of CO<sub>2</sub>e** emitted every year to heat and power Dorset's residential, commercial and public-sector properties.

To reach national carbon-reduction targets these emissions will need to be eliminated and **all** energy used to maintain a comfortable indoor environment will need to be generated from renewable sources.

This will require a significant switch away from existing gas and oil central heating systems (which currently make up 82% of all Dorset's domestic heating systems) to heat pumps, biomass, or hydrogen (when available). As well as substantial improvements to the energy efficiency of buildings to reduce overall energy demand.

To achieve this in Dorset a huge retrofit programme will be needed to address all of the county's building stock, on top of a sizeable increase in renewable energy generation to meet residual the demand.

The high proportion of properties in Dorset connected to mains gas will pose a particular challenge, and decisions on whether to wait for developing hydrogen technologies or risk not meeting peak electricity demand through over adoption of heat-pumps will be very hard.

In addition it is predicted that a further 18,000 houses will be built in Dorset in the next decade. These will need to be zero-carbon in design and build if they are to avoid adding to the county's emissions further.

Dorset Council's own buildings and assets currently account for around 70% of its footprint. In order to reach net zero the council will need to focus on improving energy efficiency, transitioning away from fossil fuels, and sourcing energy from renewable sources.

An asset review of the new unitary authority is currently underway and an Asset Management Plan is in development.

Significant new building projects led by Dorset Council, including the Weymouth Peninsula and Building Better Lives programme, will provide an opportunity to create true net zero carbon homes and commercial properties. If this opportunity is not taken now, or in the near future, these developments will increase Dorset's footprint further.

## Dorset's progress so far...

-  40% reduction in Dorset's building emissions since 2005 (in line with national figures, and mostly due to grid decarbonisation)
-  150 homes a year benefitting from improved heating systems and reduced fuel poverty through Dorset Council's Healthy Homes Scheme
-  Over 100 organisations have benefited from £2.5m of grant funding and free technical support for energy efficiency and renewable energy projects through Dorset Council's Low Carbon Dorset programme
-  47% reduction in electricity used for streetlighting since 2008 as a result of energy efficiency measures



Hear more about the role buildings have to play in tackling the climate emergency from Dorset Council's **Service Manager for Building Projects...**

## Key Issues...

- Nationally**
- Lack of national strategy for heat** resulting in uncertainty for investment decisions
  - Current standards & potential future homes standards for new developments** are not high enough to deliver on national carbon-reduction targets
  - Retrofitting current housing stock is a very significant challenge** and will require action from different organisations, government and individuals
  - Lack of legal requirement to retrofit buildings**, combined with the relative cost of retrofit measures and average energy costs
  - Fitting gas boilers is currently the most cost-effective way of addressing fuel poverty** but maintains reliance on fossil fuels
- In Dorset**
- Dorset Council is currently undertaking an asset review** and therefore it is unclear which buildings will be retained
  - Lack of historic emissions data for Dorset Council** as the new authority only formed in 2019
  - Rural nature of Dorset** results in a relatively high proportion of older, detached, hard-to-treat and off-gas-grid buildings
  - Lack of renewable energy capacity in Dorset** means the demand of buildings cannot be met from local renewable energy sources
  - Higher build specifications to address the climate emergency may increase build costs** and conflict with the need for more affordable housing
  - Commercial and industrial emissions are less dependent on gas** - with a higher proportion of this sector's emissions coming from electricity and other fuels

## Key Opportunities...

- Upgrading the quality of Dorset's housing stock** to make homes healthier, more comfortable and safer from impacts of climate change
- Reducing energy bills for residents** and helping tackle fuel poverty in Dorset
- Improving quality of commercial premises** - creating better working environments, reduced energy bills, and increased productivity and competitiveness for businesses
- Chance to design out energy use and design in climate resilience** in Dorset's new builds
- Opportunity for Dorset Council to lead by example** by de-carbonising own estate
- Scope to expand Dorset Council's proven energy efficiency and behaviour change programmes** to provide additional support and funding to residents (Dorset Healthy Homes) and organisations (Low Carbon Dorset)



## Areas for Action...

Dorset Council is extremely limited in the powers it has to achieve the aforementioned objectives. However, we do have control of our own current buildings and any future buildings that are constructed on our land. We are also able to influence and stimulate action with partners to facilitate change.

### Direct

-  Lead by example by ensuring Dorset Council's estate becomes zero carbon by 2040
-  Ensure climate change is a central consideration throughout the asset review, and in the development of Dorset Council's Asset Management plan
-  Develop and promote case studies and examples of best practice on our own estate to encourage replication by others
-  Establish policies to ensure that any of the Council's new build projects are designed to be zero carbon from the outset.
-  Continue upgrade off all Dorset streetlights to LEDs

### Indirect (through services)

-  Encourage designs and layouts which lend themselves to low-carbon energy solutions, and provide guidance and advice for developers to achieve zero carbon standards
-  Ensure the Dorset Housing Strategy incorporates the reduction of carbon emissions and increased risk to climate impacts
-  Develop local plan policies to ensure climate risks are identified and avoided in new developments, such as flood risks and overheating
-  Secure funding to expand and extend the Low Carbon Dorset Programme. If this is successful, seek funding to extend it further, both in time and scope

### Influence & Partnership

-  Lobby government for clarity on national strategy for heat and national policy framework
-  Work in partnership to deliver programmes to improve energy efficiency of housing stock (e.g further expand Healthy Homes Scheme)
-  Decarbonise heating by investigating largescale installation of low carbon heating and undertaking heat mapping to identify opportunities
-  Educate residential and non-residential sectors on low carbon technologies, energy efficiency, and sources of funding to encourage behaviour change & greater uptake of low-carbon technology
-  Work with partners to increase climate change resilience of communities & buildings by understanding the future climate risks within Dorset



## Scale of the challenge...

The production of food is the fourth highest greenhouse gas emitting sector in the World. In the UK agriculture alone accounts for 10% of all carbon emissions. When you then take into account emissions from food processing, transport and food waste as well, it is estimated that the total carbon footprint of food and drink consumed in Britain is **130 million tonnes CO<sub>2</sub>e** a year.

To reduce the environmental impacts of food production, but still meet the rising demands, more food will need to be produced using less land and emitting fewer greenhouse gases. This will mean farming practices, both nationally and within Dorset, will need to change.

For Dorset, where approximately 75% of the land is used for agriculture, we will need a county-wide shift to less carbon-intensive, more sustainable food production methods. Where possible the wider adoption of regenerative farming practices will be needed.

This will include making changes to the Council's own county farm estate, which comprises of 46 farms spread over 2,600 hectares.

The sector will also need to work on adapting to the changing climate. A warmer and wetter environment in Dorset will mean a change in planting and harvesting dates, crop varieties, and suitable livestock breeds. This may consequently affect food choice through price and availability.

As well as changes to food production and farming practices, a significant shift in consumer behaviour is required. There will need to be less demand for carbon-intensive foods like meat and dairy, and an increase

in the sourcing of food and drink locally. A drastic reduction in food waste, which is currently equivalent to around a fifth of all food purchased, will also be needed.

## Dorset's progress so far...



Dorset Farmers' Market was established in 2004, and shortens the chain between food producer and purchaser, reducing food miles travelled



Creation of [Dorset Food & Drink](#) a not-for-profit, community interest company who support and promote local food & drink businesses



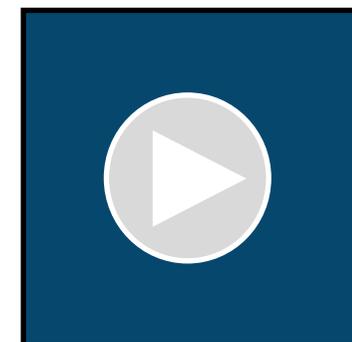
Collaborative campaigns with Dorset Food & Drink and Litter Free Coast & Sea are helping to tackle the issue of packaging waste



All of Dorset's household food waste is now treated within the county using anaerobic digestion (see [Waste](#))



Hear more about the challenge we are facing both globally and in Dorset from Dorset Council's **insert officer name...**



## Key Issues...

Nationally

- Food with high energy density & increased carbon emissions is often cheaper than its less energy dense counterparts** - usually evident in more processed foods with high sugar and fat contents
- Increases in extreme weather events are likely to have negative impacts on the availability of food nationally & globally** - resulting in price increases
- Land made available to increase biodiversity** will reduce the amount of land available for food production
- High volumes of food waste generated in UK** equivalent to between a fifth and a quarter of that purchased by consumers for in home and out of home consumption (22%)

In Dorset

- Dorset County Farm Estate is currently focussed on carbon-intensive practices** providing little additional ecological or carbon sequestration gain
- Locally produced, organic foods carry a price premium** which limits its accessibility to low-income families
- Food poverty in Dorset** – recent studies showed that Weymouth's foodbank is the busiest in the county
- The percentage and volume of food and drink sold at local producers' markets and farm shops is very low** in comparison to the amount of food and drink consumed
- Food production in Dorset directly employs 5,974 people**, which is 9.8% of the total employed in the sector in the southwest

## Key Opportunities...

- County Farm Estate can play an important demonstrative role** for low-carbon, ecologically friendly farming techniques
- Developing a vibrant and diverse sustainable food economy in Dorset**, which includes exotic food previously not grown in UK
- Change in land use to deliver climate change mitigation and adaptation** where farm business restructuring allows
- Reduced air pollution** due to reduced transportation of food
- Improve local diets** and reduce weight and health problems as a result of a healthier eating
- Tackle food poverty** through food waste reduction activities
- Provide a basis for secure livelihoods** by aligning food production to agroecological or regenerative principles



Figure 27



Figure 28

## Areas for Action...

Dorset Council must work towards reducing our carbon emissions output, food poverty and the level of waste produced, all while meeting the increasing demand for food. To do so, we must facilitate change by establishing the following direct, indirect and influential initiatives...

### Direct

-  Work with Council tenants and concessions to reduce food waste and promote less packaging
-  Continued adoption of the Council's single use plastic policy throughout its estate, operations, tenants and concessions
-  Increase range of edible fruits, flowers, and vegetables in Council owned parks, rooftops, and open spaces
-  Reduce use of fertilizers on Council land by increased use of locally produced compost

### Indirect (through services)

-  Work to develop opportunities for enhancing Dorset's ecological networks
-  Work with partners to reduce meat and increase plant-based meals in care homes and schools
-  Work with Council tenants and concessionaires to reduce the sale of products with high GHG emissions
-  Develop funding scheme to improve the efficiency of Council (Tricuro sites / other care homes) and schools' catering equipment, and switch to electric sources to allow for carbon neutral catering
-  Work with County Farm tenants to encourage the adoption of more climate and wildlife friendly practices

### Influence & Partnership

-  Continue to work with producers and partners to promote 'local food' and reduce food miles
-  Promote home growing and allotments to Dorset residents
-  Explore the adoption of tools to help engage school staff (and potentially students) to create low-carbon meals, with consideration of ingredients, food miles, and cooking methods
-  Promote Green Kitchen Standard & Food for Life to Dorset businesses
-  Work with partners to promote low-carbon affordable food options to Dorset residents
-  Work with partners to help food and drink suppliers within Dorset to be resilient to climate change



## Scale of the challenge...

The commercial and industrial sector is a significant contributor to climate change and accounts for just under a quarter of the county's emissions.

In order to transition to net-zero we will need to create a **zero-carbon economy** here in Dorset. This means that emissions from the county's commercial & industrial sector, which in 2017 amounted to **433 kilotons of CO<sub>2</sub>e**, will need to be eliminated whilst making sure the county's economy still thrives.

To do this Dorset businesses will need to reduce their energy consumption and increase their self-supply of renewable energy. All commercial buildings will need to become net-zero, all water use will need to be reduced, and all emissions from travel will need to decrease.

Businesses will also have their role to play in the development of a [circular economy in Dorset](#), by making products and materials more efficiently. This will also require making sure that waste is designed out and re-use is designed in.

Support and growth for Dorset's low-carbon sector will be essential. It is predicted that the low carbon economy has the potential to grow by 11% a year in the lead up to 2030, four times faster than the rest of the economy. The national drive to reduce emissions offers a significant economic opportunity for the development of low-carbon goods and services, and Dorset will need to take full advantage of it.

Furthermore, whilst economic activities have an impact on climate change, it also works the other way around. Climate change poses a

significant threat to the economy, particularly through flooding and disruption of supply chains and infrastructure. Businesses in Dorset will need to be fully supported to become more resilient to these risks.

## Dorset's progress so far...

-  Dorset's commercial and industrial emissions decreased by 46% between 2005 and 2017, mostly due to grid decarbonisation
-  Since 2017 Dorset Council's **Low Carbon Dorset** programme has supported 80 businesses to invest over £4.8m in low-carbon projects, saving 3,719 tCO<sub>2</sub>e a year & increasing renewable energy capacity by 3.4 MW<sub>p</sub>.
-  Dorset LEP's vision for economy already outlines objectives to deliver the UK Government's 'Clean Growth Grand Challenge'
-  Dorset Innovation Park developments offers local firms the chance to expand and relocate in Dorset

**Get a full overview** of Dorset's economy & the businesses operating within it here



## Key Issues...

Nationally

-  **Low carbon & renewable energy economy (LCREE) is growing slowly** and has been affected over recent years by changing legislation and incentive schemes
-  **Business investment models often seek short term return on investment** making many carbon-reduction activities cost prohibitive due to long ROIs
-  **Lack of understanding and awareness of low-carbon options and technologies** amongst businesses & they often don't have resource to investigate and implement them
-  **Additional Business Rates levy introduced by government increases business rate for those that install renewable energy on their premises** – this acts as a significant barrier to investment
-  **Circular economy at early stages of development** and is heavily influenced by national policy and regulation
-  **Many businesses operate from leased buildings**, where there is often not a benefit to landlords to invest in building fabric or renewable energy technologies

In Dorset

-  **Low Carbon Dorset (DC's current business support programme) set to finish in 2021** if additional funds are not secured
-  **Dorset's lack of transport infrastructure, location, and protected high quality landscape** lends itself to high value low-volume manufacture and service industries
-  **Dorset's protected landscape designations** add to the regulatory issues involved in installing renewable energy
-  **Dorset's predominantly rural nature leads to extensive reliance on private transport** mainly cars.

## Key Opportunities...

-  **Increase in jobs & skill development opportunities within Low Carbon Renewable Energy Economy (LCREE)** needed to respond to the scale of action required
-  **Responding to climate emergency will open up / expand markets for Dorset businesses in the low carbon economy** and offer major opportunities for green economy growth
-  **Opportunity to scale up the successful Low Carbon Dorset programme** and use proven case studies of energy efficiency and renewable energy projects to accelerate replication across county
-  **Opportunity to encourage low-carbon builds and renewable energy infrastructure at Dorset Innovation Park** as Dorset Council is both land owner of site and planning authority
-  **Dorset has a strong high-tech sector which can take advantage of clean growth** through diversification and skills
-  **Potential to attract more skilled, higher paid jobs and tackle social deprivation** through low-carbon sector growth
-  **Dorset Council can use its procurement function to prioritise social and environmental wellbeing** as well as economic value
-  **Dorset Broadband programme can help to strengthen Dorset's digital infrastructure** & enable development of innovative ICT solutions to reduce travel
-  **Opportunity to make sure tourism facilities are developed in areas accessible without the need for a car** through DC's planning function
-  **COVID 19 recovery programmes could lead to injections of finance, these could be invested in low-carbon technologies** for long-term business cost reduction and to support key sectors in Dorset

## Areas for Action...

Dorset Council cannot singlehandedly eliminate the emissions from the county's economic activities, but it can work with partners, influence services, and develop existing programmes to drive the step-change needed to transition to a zero-carbon-economy in Dorset.

### Direct

- Ensure Dorset Council procurement supports sustainable development by prioritising social & environmental wellbeing as well as economic value
- Build renewable energy infrastructure at Dorset Innovation Park

### Indirect (through services)

- Support the expansion of the Dorset Innovation Park to become a centre of excellence in clean growth
- Support greater deployment and strengthen high-speed broadband and ICT infrastructure in the county through Dorset's Broadband programme. And enable businesses to increase home working and reduce travel
- Promote the low-carbon economy and encourage investment in green jobs and businesses in Dorset
- Support businesses to become more energy and resource efficient and to install renewable energy by working with partners to expand Low Carbon Dorset programme

### Influence & Partnership

- Maximise opportunities for clean growth in Dorset by working with businesses & partners to put clean growth at centre of local economic development plans
- Support Dorset's strong high-tech sector to diversify & take advantage of growth in low carbon sector
- Work with partners to attract green sector businesses with highly skilled workforces to Dorset
- Help businesses be more resilient to climate change through our planning & flood risk management functions
- Work with the tourism sector to develop specific programmes of support for sustainable tourism & make Dorset a low-carbon tourism destination
- Use potential COVID-19 recovery funds to provide investment in low-carbon technologies for key sectors



## Scale of the challenge...

To reduce the carbon impact from our waste activities, Dorset must work towards creating a more sustainable and efficient circular economy. This means reducing the amount of waste we produce by keeping resources in use for as long as possible and recovering and reusing products and materials wherever we can.

At present, Dorset (including Bournemouth, Christchurch and Poole) generates **1.6 million tonnes of waste each year**. Estimated trajectories in the Dorset Waste Plan predict this figure will continue to grow.

Nearly half of Dorset's waste is categorised as either construction, demolition, excavation or hazardous. And the remaining 52% (around 840,000 tonnes) is split between household waste and commercial & industrial waste.

As Dorset Council has key statutory functions for household waste we have an opportunity to further drive the development of a circular economy here. And encourage and support the reduction, reuse and recycling of waste across the county. The Council has made good progress by harmonising collection services, increased the recycling rate year on year and curbed waste growth through waste-reduction initiatives - but the scale of this challenge remains significant. Last year Dorset households produced 174,002 tonnes of waste, resulting in the emission of 18,768 tonnes of CO<sub>2</sub>e.

Commercial & industrial waste figures are harder to estimate as most of this waste is collected and managed by private companies, making access to accurate data more difficult. But it is estimated that it

accounts for around half of all waste produced in Dorset.

As a newly formed Council we are currently gathering data on our own waste and associated emissions. But to get an idea of scale, in 2019 the county council alone generated 1,201 tonnes of waste. We need to reduce this amount as much as possible, and implement a robust and consistent approach to managing and monitoring waste across all of our operations and sites, recycling and reusing as much as possible.

## Dorset's progress so far...

-  The recycling rate in Dorset is 59.6%, putting Dorset in the top 3 comparable authorities in England
-  70% reduction in household waste sent to landfill in last 10 years, saving around £3.3m each year
-  Top performing Council in England, Wales & Northern Ireland for Eunomia's Local Authority Recycling Carbon Index
-  Targeted campaigns delivered by Dorset Waste Service to help households reduce their waste
-  Incentives placed in waste disposal contracts to encourage waste to be treated rather than landfilled
-  All of Dorset's household organic waste is now treated within the county using anaerobic digestion



Hear more about the challenge we are facing from Dorset Council's **insert officer name...**



## Key Issues...

Nationally

-  **National schemes are still emerging** to support the new UK waste strategy and a transition to a circular economy
-  **Lack of economic drivers** for the commercial and industrial sectors to recycle and reuse waste
-  **Lack of effective tools** to stop littering and create sustained behavioural change
-  **Life span of products getting shorter**—despite advances in technology the average life span of many products we buy and use in daily life is lower than 20 years ago
-  **An estimated 10 million tonnes of food & drink wasted** post-farm gate every year

In Dorset

-  **Dorset Council was only formed in 2019**, meaning we are currently compiling a full picture of waste streams & associated emissions, and we do not currently have a consistent approach to managing waste from our business activities
-  **Limited oversight and influence over Commercial & Industrial waste** due to a competitive market and commercially sensitive data
-  **Significant level of investment required** for new local waste facilities
-  **Maximising the use of the Recycle for Dorset service** for residents and continuing to influence behavioural change to reduce waste further

## Key Opportunities...

-  **Opportunity as a new unitary council** to review our internal waste management practices and implement one robust scheme across all of our operations to reduce waste, reuse, recycle & recover as much as possible
-  **Opportunities for change in shorter time frame** as a result of collection service undertaken in-house & shorter waste contracts in place (7 years compared to typical Local Authority waste contract of 20-25 years)
-  **Substantial cost savings could be achieved** if fly-tipping incidents reduced
-  **Dorset Waste Plan provides the framework for bringing forward new sites** to address the need for new local facilities
-  **Opportunity to influence and implement the resources and waste strategy for England** through extended producer responsibility, consistency in recycling collections and the deposit return scheme



Figure 30

## Areas for Action...

Dorset Council aims to reduce the amount of waste that is generated in Dorset as much as possible and move to a circular economy model. There are direct, indirect, and influential initiatives that we can establish, that will help us to facilitate this change.

### Direct

-  Carry out internal waste audits across our operations & create waste reduction plan supported by targeted campaigns
-  Continue to work towards our commitment to become single-use plastic-free & eliminate the use of all single life products
-  Ensure waste is minimised through procurement e.g. DC suppliers to take back packaging or use reusable packaging systems
-  Develop business plan to tackle food waste within Council premises, with a particular focus on schools & adult services
-  Ensure sufficient contracts are in place to reuse, recycle & recover as much Council waste as possible
-  Work with Waste manager to reduce emissions from waste collection vehicles

### Indirect (through services)

-  Establish appropriate infrastructure to support circular economy as part of Joint Municipal Waste Management Strategy for Dorset 2008 – 33.
-  Develop targeted campaigns to reduce amount of waste produced and increase reuse & recycling
-  Trial a 'not sure' box and use results to inform residents what can or cannot be recycled
-  Trial provision of free/subsidised food-waste caddy liners in specific areas
-  Explore opportunity for increased commercial waste services
-  Develop a contract & infrastructure strategy to enable the most efficient and cost-effective solution for Dorset

### Influence & Partnership

-  Respond to second round of consultations relating to the resources & waste strategy for England
-  Investigate how Dorset Waste Services can work with partners to facilitate reduction of commercial and industrial waste
-  Continue to engage with public, communities, schools & businesses to increase understanding of waste issues & best practices
-  Develop further campaigns to reduce the amount of waste generated & stimulate further reuse, recycling & composting
-  Introduce a pilot project in partnership with Keep Britain Tidy to reduce food waste
-  Continue to work with the Police, EA & community groups to reduce littering & fly tipping



## Scale of the challenge...

When it comes to contributing to emissions water plays a relatively small role (only 0.8% of the UK's footprint). But the effects that climate change will have on it will be extensive, affecting the availability of water resources and significantly increasing risk to water quality.

By 2050 steps will need to be taken, led by the water industry, to significantly reduce demand for water, reduce wastage and manage water resources in ways that eliminate emissions and protect them for the future.

Data shows that Dorset residents each use around **131 litres of water every day**. To reduce this demand we will need to change the way we use water, making use of the latest technologies and improving the county's water efficiency. There will also need to be a greater awareness amongst households and businesses of water issues.

The Council will need to take action to reduce its own water demand, which last year amounted to around 261,644 m<sup>3</sup> of water resulting in the emission of 275 tonnes of CO<sub>2</sub>e.

Along with our daily consumption of water we also need to take into account the vast amounts of water used to produce consumer goods - 1kg of beef uses 15,415 litres! Our total water footprint is therefore much greater than simply the water we use at home and work, and to reduce this we will need to carefully consider our purchasing options.

Another challenge for Dorset will be the significant effect on local flood risks as a result of increases in rainfall. As Lead Local Flood Authority and Coastal Management Authority, Dorset Council will have a

significant role to play in flood risk management, alleviation and mitigation work.

## Dorset's progress so far...

-  A series of flood investigations & flood alleviation interventions have been developed over last decade. The most notable a £750k scheme installing resilience measures to 94 homes
-  A Local Flood Risk Management Strategy developed which sets the direction of Council's work
-  Substantial work is being done by water companies in Dorset to reduce leakage
-  Water companies have been supporting Dorset customers to reduce water use through services such as Wessex Water's 'home check service'.
-  Around 3/4 of Dorset households have a water meter installed
-  Dorset Wild Rivers project (2015-2020) funded by Wessex Water aims to achieve restoration of river habitats and enhance wetlands
-  Former County Council led ongoing programme to install water efficiency measures (such as waterless urinals, water saving taps & rainwater harvesting)



Find out more about Dorset's water suppliers and the work they are doing in the area

[Wessex Water](#)

[South West Water](#)

## Key Issues...

Nationally

-  **Limited powers to enforce the installation of water conservation measures** in new developments or higher standards beyond Building Regulations
-  **Many products produced by industry still use vast amounts of water**, including the food and farming industries
-  **Most of the action is required at an industry level**
-  **Around 3 billion litres of water a day is lost through leakage in UK** – approx. 22% of all water put into supply
-  **Water availability is often a key controlling factor in biodiversity** with aquatic organisms and groundwater dependent terrestrial ecosystems at risk of being directly affected

In Dorset

-  **Less than half of the rivers of Dorset are considered 'good' water quality** under current European standards
-  **Despite greatly improved waste water treatment, diffuse nutrient pollution from agriculture remains a major problem** in the coastal and marine environment.
-  **Water reduction in Dorset is heavily reliant on behaviour change** by residents and businesses
-  **Lots of old buildings in Dorset that may not have drainage systems that can accommodate increased rainfall** predicted with climate change
-  **Climate change expected to affect availability of water and increase risk of water pollution and localised flooding** within Dorset

## Key Opportunities...

-  **Dorset Council can lead by example** by reducing water usage on own estate
-  **Reduced water bills for residents & businesses** as a result of water efficiency
-  **Partnership working with water companies and the Environment Agency** to encourage and support businesses to reduce water use and wastage
-  **Share best practice in water resource management, protection and water ecology** through the development and promotion of case studies
-  **Use of latest water conservation technologies in new builds** through Council's Planning & Building control functions
-  **Reduce future surface water flood risk from new developments** through partnership working with water companies and Sustainable Urban Drainage (SUDS)



Figure 31

© Nick Bowring

Showers are biggest water user in most UK homes

## Areas for Action...

Water is a defining characteristic for Dorset and it is critical that Dorset Council takes action through its own operations, services and influence to encourage a reduction in Dorset's water demand and wastage, and the management of water resources.

### Direct

-  Make Dorset Council buildings more water efficient, by installing technologies such as flow regulators, water efficient toilets and showerheads
-  Ensure procurement specification favours water efficient equipment
-  Reduce / replace demand on mains water within Dorset Council buildings by installing technologies such as rainwater harvesting and grey water systems
-  Carry out in-depth assessment of water leaks across Council's estate
-  Carry out audit of all Council sites holding materials hazardous to water quality to ensure correct storage is in place & ensure pollution prevention equipment is properly maintained

### Indirect (through services)

-  Ensure water use is minimised and reuse is optimised in new developments
-  Work with County Farms and Green Spaces to ensure land management practices protect water supplies
-  Ensure Dorset Council land management practices prevent water pollution
-  Identify areas at risk from flooding & ensure adequate protection is in place
-  Dredging of water ways to prevent flooding

### Influence & Partnership

-  Liaise with water companies to ensure water leaks are identified and eliminated in Dorset
-  Work with Environment Agency to ensure all high risk industrial and farming areas in Dorset have been identified and appropriate pollution prevention measures are in place
-  Work with partners to promote land management practices that prevent polluting water courses and ensure good water management
-  Work with partners to ensure climate resilience is being addressed and sufficient supplies of good quality water will be available for Dorset residents



# NATURAL ASSETS

## Scale of the challenge...

Natural Assets, which can be described collectively as Natural Capital, play a critical role in providing services that are vital for the physical wellbeing of the population, such as clean air, water, and healthy soils. This is as well as the natural regulation of hazards, such as flooding.

The productive capacity of our Natural Assets underpins the whole economy. And how we manage the demands on our Natural Capital is key to ensuring the quality and diversity of our ecology.

Biodiversity – the diversity within species, between species and of ecosystems – is declining globally. The world's 7.6 billion people represent just 0.01% of all living things by weight, but humanity has caused the loss of 83% of all wild mammals and half of all plants.

The significant proportion of Dorset (53%) has been designated for conservation as an Area of Outstanding Natural Beauty. Dorset is one of the most important counties for wildlife, with 141 Sites of Special Scientific Interest, covering an area of 199.45 km<sup>2</sup>, 11 National Nature Reserves (NNRs), and 1,254 Sites of Nature Conservation Interest (SNCIs).

In addition, 23 sites are recognised to be of international or European importance (SACs, SPAs, and RAMSAR sites) and there are also 63 Regionally Important Geological Sites (RIGS) and 45 Local Nature Reserves (LNRs).

Therefore, in order to protect our Natural Assets, Dorset Council must work towards meeting several objectives, which include raising funds

to facilitate habitat gain and furthermore improve the quality and protection its species.

This is as well as increasing sequestration, using land to increase resilience to climate change, and ensuring that future management and maintenance are financially sustainable.

## Dorset's progress so far...

-  AONB & Natural Environment teams within the Council are leading on a variety of projects to protect & enhance biodiversity
-  Natural England has developed Accessible Natural Greenspace Standard (ANGSt), providing local authorities with a detailed guide as to what constitutes accessible green space
-  Dorset AONB team are currently looking at how future agricultural support from government can help deliver their ambitions
-  Dorset Council currently meeting mitigation requirements by offsetting impact of residential development
-  Biodiversity Appraisal Protocol (BAP) set up to ensure there is an integrated approach to planning & development
-  In 2016 Dorset County Council adopted Pollinators Action Plan to reduce the decline in pollinating insects—which DC now operate
-  New ecologically beneficial approach to verge management approved by Dorset County Council in 2014 & has been progressively rolled out across the County.



Hear more about the challenge we are facing both globally and in Dorset from Dorset Council's **insert officer name...**

# NATURAL ASSETS

## Key Issues...

- Nationally**
-  **Biodiversity (the diversity within species, between species and of ecosystems) is declining globally**, faster than at any other time in human history
  -  **The use of land for more intensive agriculture, urbanisation, and afforestation** resulted in the loss and fragmentation of many semi-natural habitats
  -  **Climate change, combined with other social, economic, and environmental pressures, will present significant risks** to the services provided by the land
  -  **The UK population is predicted to increase by nine million by 2050**, increasing the area of land required for settlements



- Dorset**
-  **Intensive agriculture reduces the flows of most ecosystem services**, including flood protection, water quality, carbon storage, soil quality, and provision of habitat for wildlife
  -  **Carbon storage by changes in land use has increased** by 98% from -53 ktCO<sub>2</sub> in 2005 to -105 ktCO<sub>2</sub> in 2017, resulting in net sequestration of carbon
  -  **Overall, 47% of local Dorset businesses stated that they were dependent on ecosystem service flows** in some way

## Key Opportunities...

-  **Increase use of non-intervention management/rewilding techniques on Council land** to improve connectivity of high ecological value areas
-  **Increase area of land owned and managed for ecological and carbon sequestration outcomes** using various planning gains
-  **Ensure ecological quality is considered in flood management & highway schemes** - e.g. Weymouth Relief Road
-  **Work with tenants of County Farm's** to promote and ensure best environmental practices are upheld
-  **Promote the Health and Wellbeing benefits** of publicly accessible high ecological value land
-  **Prioritise ecological & carbon sequestration value in the design of the built environment** through planning process
-  **To ensure community tree planting initiatives are ecologically robust** and sensitive to the local landscape 'right tree in the right place'
-  **Increased tree planting where suitable** to avoid detrimental effects on other habitat types or landscape



## Areas for Action...

Natural Assets play a critical role in providing services that are vital for the physical wellbeing of the population, such as clean air, water, and healthy soils, as well as the natural regulation of hazards, such as flooding. Therefore, Dorset Council must towards meeting several direct, indirect, and influential objectives to protect these Natural Assets.

### Direct

-  Identify opportunities to use Dorset Council land to increase resilience to climate change
-  Increase biodiversity on identified areas of Council land
-  Increase area of Council owned or managed land for ecological & carbon sequestration outcomes
-  Creation of wildlife friendly areas on council land (incl. bee-friendly zones)
-  Increase hedge & woodland planting through Dormouse District Licence project
-  Review all chemical use to ensure no harm to unintended species
-  Expand cut & collect verge management
-  Increase tree planting where suitable to avoid detrimental effects on other habitat types or landscape

### Indirect (through services)

-  Develop / adopt biodiversity, green & open spaces supplementary planning document to ensure a consistent approach for developers to take up protection & enhancement measures of key biodiverse areas
-  Use the financial contributions from development raised through Nitrates Supplementary Planning Document to buy land for rewilding / tree planting / creation of rough grassland and scrub
-  Ensure all decision making around use of natural assets is based upon ecological value
-  Manage heathlands SPD – SANGS in-house to provide additional areas for ecological & carbon sequestration purposes
-  Work with tenants of County Farm's to promote and ensure best environmental practices are upheld

### Influence & Partnership

-  Communicate to residents, business, & landowners good practice
-  Develop guidance to ensure community tree planting initiatives are ecologically robust & sensitive to local landscape ('right tree in the right place')
-  Promote tree planting through partnership working & use of Council tree planting checklist
-  Promote the health & wellbeing benefits of publicly accessible high ecological value land
-  Work in partnership with Children's & Adult Services to ensure natural environment is fully utilised in social care offer
-  Work with partners to connect fragmented habitats across county
-  Work with town & parish councils to promote best practice within their greenspace & communities



## Scale of the challenge...

Due to its dependency on fossil fuels the transport sector is a major contributor to our nation's carbon footprint. Decarbonising this sector will be a key challenge in moving towards a zero-carbon future.

Here in Dorset transport alone is responsible for an estimated **765 kilotons of CO<sub>2</sub>e** each year, making it the single biggest contributor to our county's footprint. To reach zero carbon, fossil fuel use in the transport sector will need to be eliminated. This will not be as simple as just switching to different fuels or energy sources. It will require significant changes in attitudes, planning and infrastructure, economic incentives and political and institutional changes.

In rural areas like Dorset, car ownership is amongst the highest in the country. And in 2018 just over 2,500 million vehicle miles were travelled in Dorset Council area. A significant shift will be needed to make active travel and public transport the first transport mode of choice. This will be a significant challenge, in 2018 only 1% of UK passenger journeys were made on public transport.

Transport will also need to be a key focus for Dorset Council in its own ambitions to eliminate emissions from its activities and services. Change will be required in the way staff commute to work, workplace practices, fleet operations and business travel.

Over 9,000 Dorset Council employees currently commute to work. Changing commuter travel behaviour and achieving a shift from cars to more sustainable modes of transport will be required.

Mileage undertaken by council staff on work business will also need to

be significantly reduced, last year this amounted to 5.3million miles, costing the council £1.6m and emitting 1,496 tonnes of CO<sub>2</sub>e.

The council's fleet vehicle emissions will also need to be eliminated, this will require a staged renewal programme to replace the existing fleet with electric or best possible alternative.

To support the move to electric vehicles in both the Council fleet and the county there will need to be an increase in the provision of electric vehicle charging points. This will require significant action from both public and private sectors in Dorset.

## Dorset's progress so far...



UK ban on the sale of new petrol and diesel cars by 2040, government consulting on earlier 2035 ban



Dorset's Local Transport Plan already demonstrates a strong commitment to sustainable transport policies and carbon reduction



662 tonnes of CO<sub>2</sub>e have been saved since 2015 as a result of CarshareDorset.com car sharing scheme



BCP Council & Dorset Council awarded £79 million in 2020 by DfT's Transforming Cities fund to deliver large sustainable transport network



Hear more about the challenges we are facing here in Dorset from Dorset Council's **insert officer name...**

## Key Issues...

Nationally

-  **Lack of national direction and strategy**, although this will improve with the publication of the decarbonisation plan and bus strategy
-  **Transport networks are closely interlinked** so climate related disruption affecting one form of transport can have knock-on effects on others
-  **Relatively little overall change** in the level of greenhouse gas emissions from the transport sector in last 20 years

In Dorset

-  **Inherited infrastructure network built around private vehicle usage** which has led to the car being the first choice of travel
-  **Culture of commuting to work** with car being the default mode of travel
-  **School choice contributes** to transport issues
-  **Rural nature of parts of Dorset** means that accessing employment, training and other essential services requires increased travel
-  **Quality of digital infrastructure in rural areas** to support home working, online learning and e-commerce
-  **Low carbon active travel infrastructure not sufficiently developed** to complete area-wide networks
-  **Lack of funding to upgrade bus infrastructure** and support rural services
-  **Lack of service frequency on some rail corridors**, not suitable for commuting

## Key Opportunities...

-  **Additional funding available from central government** for buses funding, EV charging, active travel
-  **Embed zero-carbon transition into statutory planning documents** including the Local Plan & LTP
-  **Capitalise on private sector investment** to expand public electric vehicle charging network
-  **Increased health benefits** from active travel with resulting impacts on wellbeing
-  **Reduced air pollution** from transport
-  **Greening of the council fleet** utilising replacement programme to transition to ULEVs
-  **Encourage continuation of behaviour & organisational changes that have resulted from COVID-19**, including increased active travel and home working
-  **Creation of jobs in Dorset's green economy** as a result of investment in zero carbon



Figure 34

## Areas for Action...

Decarbonising Dorset's transport sector will be a major step towards a net zero future, and significant action will be required from the Council to eliminate associated emissions from its own activities & services, as well as working with partners and using its influence to facilitate change on a county-wide level...

### Direct

-  Maximise ultra-low-carbon vehicle replacement within Council fleet
-  Provide EV charging points & other ultra-low-emission fuel alternatives across the Council property estate
-  Reduce emissions from transport infrastructure construction and maintenance
-  Ensure access to sustainable transport is considered in planning applications
-  Encourage behavioural change in way staff travel to and for work
-  Reduce the need for staff to travel to and for work
-  Understand key risks and potential costs posed by climate change to transport & travel in Dorset
-  Mainstream climate resilience in future strategies and policies

### Indirect (through services)

-  Improve low-carbon transport infrastructure by embedding it in the Local Plan and Transport Plan
-  Increase investment in walking, cycling & public transport infrastructure - secured through LTP, developer contributions, and other available funding streams
-  Encourage decarbonisation of road transport through development of EV charging network & promotion of low emissions transport vehicles
-  Improve quality & availability of public transport to make services more attractive to the travelling public
-  Encourage behaviour change through active & sustainable travel campaigns and initiatives.

### Influence & Partnership

-  Lobby government - e.g. for Rail improvements
-  Respond to government calls and submit high quality grant applications
-  Redirect investment from strategic road schemes to low-carbon transport (Work with Subnational Transport Body and Local Enterprise Partnership)
-  Work with Dorset Business Travel Network & Digital Dorset to promote use of ICT to individuals and businesses to avoid travel & encourage working from home
-  Work with schools, parents and partners to reduce the carbon foot print of the daily school commute



# MAKING IT HAPPEN

Taking action to address the Climate and Ecological Emergency cannot be done solely by officers working from the centre. It will need a multi-disciplinary approach, drawing on skills and resources from across the organisation and with wider partners. It will need to be part of the way we do things and embedded in the way we deliver our services.

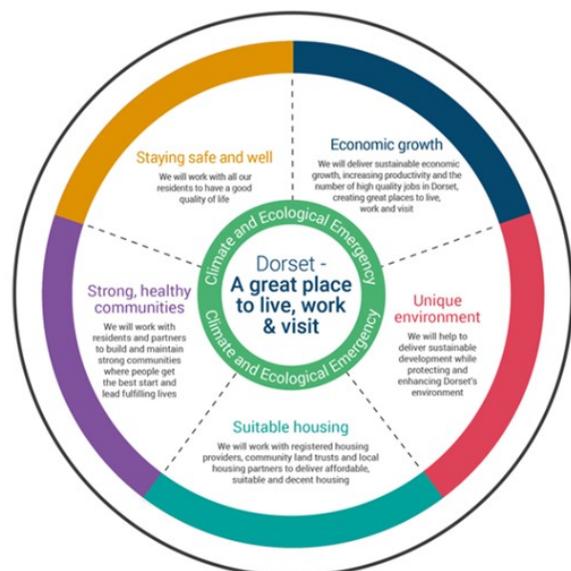


Figure 35

Dorset Council have placed the Climate and Ecological Emergency at the heart of our Corporate Plan. This strategy document provides a framework for services to integrate our response to the climate emergency into their planning. We will be using this paper as a driving force to move our approach to the climate emergency forward at pace.

To make the strategy happen, there are several key things we need to put in place.

## Leadership & Governance

**We will** lobby government for additional resources and the national policy framework to support climate action in Dorset. In addition, we will actively input into national forums and consultations to encourage policy development in this area.

**We will** ensure organisational structures are in place to take forward action across the Council. We will review our structures currently in place to develop this plan to ensure governance at the highest level, involving key decision-makers with a clear mandate for action. This is as well as ensuring all staff are aware of their responsibilities in the delivery of actions, and that departments are linked at a strategic level (e.g. waste and planning).

**We will** ensure enough human resource is in place to drive forward action either through Council departments or involvement of wider partners.

**We will** develop tools to undertake robust impact and policy appraisal to ensure climate change priorities and targets are considered in all key corporate projects, programmes, and strategies, and will utilise whole-life costing when assessing all capital projects.

**We will** ensure climate emergency is embedded in our key strategies and plans, such as the developing Dorset Local Plan and our asset management plans.

**We will** ensure we fully understand the risks of climate change on our business and that it is appropriately addressed within our risk management and business continuity processes.

## Funding the response

Tackling the climate emergency will require significant investment at all levels of society. Dorset Council alone will need to invest many millions of pounds (over £100m) over the next 20- 30 years just to become a Carbon Neutral Council. Many measures will have a financial return on investment, but many may not. However, many will have wider health and economic benefits which can be realised. As further work is done to draw up detailed implementation plans for our buildings, vehicles, and energy infrastructure, we will need to develop a detailed financial strategy. It is a challenging, financial time for us all, especially Local Authorities.

**We will** develop a finance strategy to enable us to deliver this climate emergency response by identifying and implementing ways for our finance department to actively support climate change action. This includes establishing invest-to-save schemes, such as our transformation fund, capital receipts through asset rationalisation, and building into our capital programme. We will also explore options to raise additional funds through borrowing, council tax, developer contributions, and business rates.

Wider action across the County is likely to require several billion pounds of investment from the government, organisations, and individuals. It is anticipated that further funding and incentives will be forthcoming from central government to support the shift to a low-carbon future.

**We will** work with partners and lobby government to seek additional support and external funding and to maximise opportunities for external funding from government and others, making sure Dorset gets its fair share. This is in addition to securing innovative financial arrangements for climate change projects and programmes and giving significant weight to climate change in the procurement process.

## Engagement & communications

We all need to take action to address the climate emergency and support the transition to a low-carbon future. Many organisations and individuals in Dorset are already actively involved in addressing the climate emergency. With the highest proportion of town and parish councils in the UK declaring a climate emergency, we know there are many knowledgeable individuals and organisations in Dorset, with good practice examples that others can follow.

Through our initial call for ideas, Dorset residents told us they wanted Dorset Council to help with understanding climate change and the steps that can be taken to tackle it. The key audiences for this support identified as residents, businesses, farms, and schools. Our staff are also key to our success and have told us they wish to be more involved.

We already undertake many awareness and behaviour change activities in areas related to tackling carbon emissions and improving ecology, such as active travel, household waste, and school recycling. In order to tackle this emergency head on, we need to put the climate at

# MAKING IT HAPPEN

---

the forefront of our communications. We will do this by:

Developing a comprehensive communications strategy for our approach to the climate and ecological emergency. This strategy will draw upon a variety of media and approaches to deliver key messages on climate change issues and help drive change in Dorset, with a focus on raising awareness, supporting community action, and engaging stakeholders in the decision-making.

Some of the key actions we will take are -

**RAISING AWARENESS** **We will** look to provide more accessible and digestible information on climate change and ecology and the actions we can all take through a range of channels. These will include upgrading our climate change website, developing an online information hub for sharing information, and best practice. This is as well as directing information to residents through Council literature and encouraging an open and ongoing dialogue between the Council and Dorset residents.

**We will** improve the awareness, engagement, and knowledge of our staff and service providers through staff awareness campaigns, with a focus on how employees can reduce their carbon emissions. This is in addition to increasing their climate resilience in the workplace and at home and integrating key climate change messages into induction programmes. Furthermore, **we will** organise targeted briefings and training sessions for officers, members, and decision makers on the benefits and opportunities of tackling climate change, highlighting this contribution to other Council priorities. We will also establish an internal climate change champions programme.

**SUPPORTING COMMUNITY ACTION** **We will** support Town and Parish Councils to develop and implement their organisation and area wide climate action plans. This is as well as helping them engage with residents to encourage community action and drive change at a grassroots community level.

**We will** help to facilitate and support new and existing community-led projects and community organisations active in this area. Furthermore, **we will** work with these groups to signpost and communicate shared messages.

## ENGAGEMENT WITH KEY STAKEHOLDERS

**We will** consult with residents and organisations on this strategy and plans as they develop, using existing and new consultation processes.

**We will** build support from stakeholders and the wider public by informing and educating on the benefits and opportunities of acting on climate change and creating, maintaining, and developing partnership working on all aspects of climate change action. **We will** seek to develop a Dorset Climate Emergency partnership group.

**We will** facilitate the development of a Dorset-wide partnership with other key public, private, and third sector partners in order to develop a partnership approach to driving forward some of the fundamental changes that will be required to deliver a Carbon Neutral County.

## Monitoring and progress reporting



Figure 36

To ensure we are on track to meet our targets and not exceed our carbon budgets, we need a robust baseline and regular progress monitoring of both carbon emissions and ecological indicators. Our current baseline is currently incomplete.

**We will** develop a robust baseline for Council and County carbon emissions and ecology, developing in-house data collection systems to draw data from all the former Councils now forming Dorset Council.

This is as well as considering wider emissions from Council activities (Scope 3) such as procurement.

**We will** further explore the Dorset County footprint, beyond the data provided by Central Government, to provide a wider understanding of Dorset's emissions e.g. agriculture.

This strategy sets out the key areas for action and will be supported by more detailed plans, which will develop over time. A separate detailed action plan will be published, which will be a live document and updated as work develops in this area.

**We will** monitor and report on actions and progress in achieving carbon reduction by producing an annual report of progress on climate change targets, budgets, and actions.

# YOUR IDEAS

## Call for Ideas

In December 2019, we asked members of the public to submit ideas on how Dorset Council might be able to help tackle climate and ecology concerns. The Call for Ideas was open to everyone through the Council's website and was promoted widely through the local media and the Council's social media channels.



Of the **783 ideas received** in the Council's Call for Ideas, 32 were invited to present at one of the two Inquiry Day sessions which took place at South Walks House, Dorchester on Friday 21 February and Tuesday 3 March respectively.



## Key Findings

When submitting ideas, individuals and organisations were asked to choose a category (Buildings, Natural Environment, Waste and Energy, Transport, Leadership and Influence).

The most commonly selected was Transport, with 26% of all ideas submitted falling within this category. The category with the fewest submissions was leadership with just 8% of the ideas.



Figure 38

**Transport & Travel...** was the most common topic, with many people mentioning the need to develop Dorset's transport links, specifically calling for improvements to be made to the County's footpaths and cycleways, and investment in bus and rail services.

An increase in EV charging points, and increased traffic control measures were also mentioned frequently. This is in addition to other common suggestions, including increasing park and ride schemes, introducing car-free days in towns, using parking charges to

discourage unnecessary car journeys, and introducing no-idling zones.

## Renewable Energy Generation...



107 of all the ideas submitted mentioned renewable energy generation. Ideas focusing on solar power in Dorset were the most common. Examples of these ideas include installing solar PV on the roofs of all Council owned buildings, the introduction of grant schemes to help residents install solar PV on domestic properties and incentivising solar installation through reduced Business Rates.

Other renewable technologies commonly mentioned were wind, tidal, heat-pumps, hydro, wave, anaerobic digestion, and multi-measure approaches, with several people calling for the Navitus Bay offshore wind farm plan to be re-visited.

**Waste Services...** Many of the ideas in this area focused on improving the waste collection and recycling services in the County. This included people calling for an increase in recycling facilities, clearer instructions on what and how to recycle, and the adoption of a circular waste economy in Dorset.

Other recurring themes included initiatives to reduce litter, the introduction and enforcement of single-use-plastic policies, and waste heat schemes.

**Planning...** This was the most commonly mentioned theme, with 151 (19%) of all ideas focusing on planning considerations and restrictions. Within this theme, ideas centred around three main topics:

- ▶ Tighter restrictions on developers
- ▶ Relaxation of planning restrictions for listed buildings
- ▶ Prioritisation of brownfield sites for development

Of these topics, the most commonly mentioned was imposing tighter restrictions on housing developers. These ideas ranged from making sure all new buildings are built with solar panels and EV charge points, to stopping developers from felling mature trees with many between.



## Leading the way...

A high proportion of the ideas submitted focused on the leadership role of the Council, and key changes it can make to its own operations and behaviours to set an example for the rest of the County. Recurring themes under this heading included:

- Investment in electric or biofuel vehicles
- Following examples of others
- Implementing stricter laws
- Reducing the footprint of the Council's buildings
- Making changes to the Council's operations
- Working with partners
- Lobbying central government
- Developing and publishing plans
- Making changes to street lighting
- Divesting from fossil fuel investments
- Public consultation
- Monitoring, recording, and publishing data

**Communication and support...** Many of the ideas called on the Council to provide more information and support on understanding climate change and the steps that can be taken to tackle it. The key audiences for this support were identified as residents, businesses, farms, and schools. Furthermore, ideas included the development of a support platform or hub, increased communication and education, and the sharing of best practice.

Support for community action was another recurring theme under this heading. Many people suggested that the Council should help facilitate and support new and existing community-led projects.

**Natural Environment...** Tree planting schemes featured heavily in the ideas submitted, with many people wanting the Council to plant more trees and support others to do the same. People also suggested re-wilding schemes that could be introduced in the County and the need for this approach to be reflected in wider policy making and planning decisions. People also asked for an increase in environmental protections, changes in greenspace management, and a reduction in the use of harmful pesticides and herbicides.

Several people suggested adopting a less impactful approach to verge side management, something that Dorset Council pioneered.

**Barriers...** The **top three barriers** to implementing ideas identified by people were:



# YOUR IDEAS

## Engaging with Dorset's Youth

It was also key that we heard from Dorset's young people on the issue of Climate Change and what it meant to them. Representatives from schools across Dorset and Kingston Mauward College came to speak to the Council's EAP in December. They told us about their major concerns of what climate change may mean to their futures and worries about the type of world they will be inheriting in years to come. They asked that we take action to reduce carbon emissions and encourage everyone in Dorset to take action.



Figure 41

EAP members visited Damers school to learn about all their eco-school initiatives already encouraging local businesses to act by removing single use plastics.

They also presented their ideas at the Inquiry Day in March.

Members of Dorset Youth Council also attended the Inquiry Day session and updated on their actions to develop a climate pledge for Dorset and their work to encourage schools to take greater action. They also laid down a challenge to Councillors to reduce their personal carbon footprint in the [#CouncillorZeroCarbonChallenge](#).

## Using your ideas

We have taken account of the key findings and recurring themes raised through our engagement with Dorset residents and have used these to help shape this strategy and the Council's approach to tackling and mitigating climate change in Dorset. You will see this within the relevant areas for action section within this strategy, as well as in the more detailed supporting papers.

As we move forward to develop more detailed plans for the delivery of the strategy, we will draw on the specific detail of the individual ideas submitted.

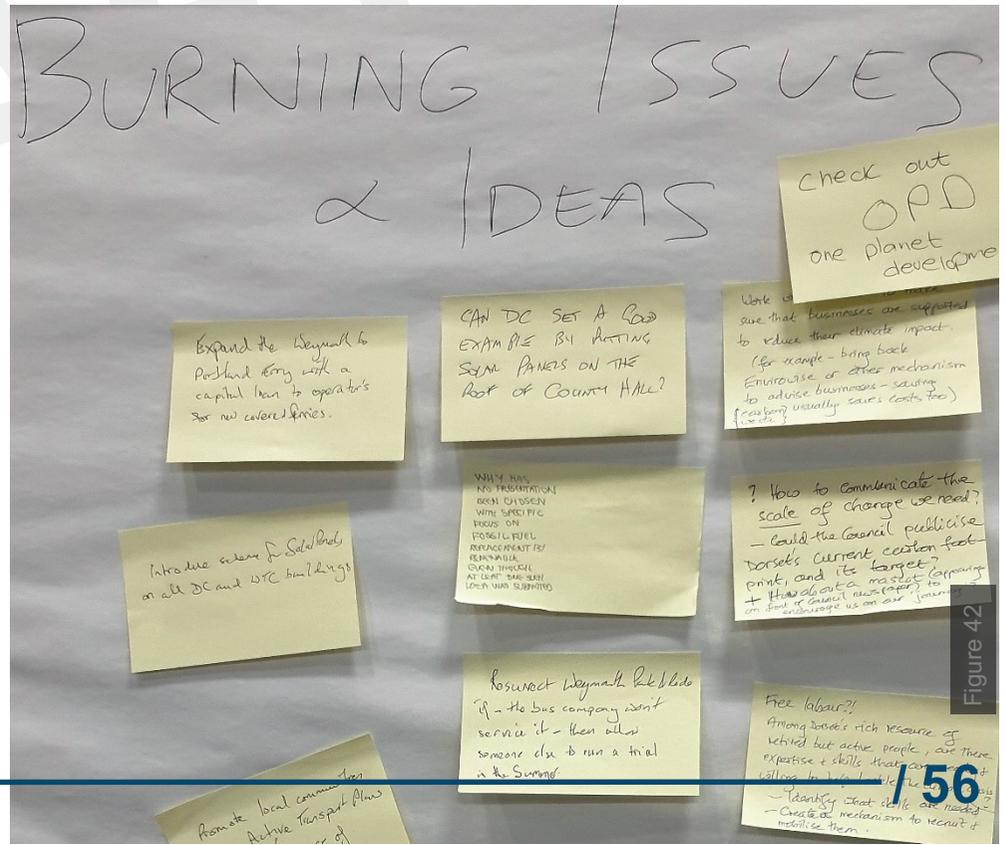


Figure 42

# NEXT STEPS

This strategy is a start at setting out the general direction of travel that is required within the County. It explains some of the key challenges that we all face in achieving a carbon-neutral Dorset and identifies some of the areas where Dorset Council will endeavour to take action. Achieving our goal will require a shared understanding of the issues and action, by not only the Council, but organisations and individuals across Dorset.

Action has already started in several areas highlighted within this strategy and many initiatives are already in place to mitigate climate change, improve and protect ecology and make Dorset more resilient to climate change. It is clear however, that we need a massive step up in our actions.

## Consult with the public and wider stakeholders

Our next key step in finalising this strategy is to consult the public and key stakeholders in order to gather your views on the approach set out in this document. This will largely take the form of a detailed questionnaire to find out if you think we have this strategy right, have identified the correct areas for action, or whether any points are missing or need further consideration. We intend to do this over the autumn to ensure your views are reflected in the final strategy and help inform our action plans.

## Detailed action planning

We will take a project management approach to the delivery of our Climate and Ecological Emergency response. The areas for action within this strategy will therefore be further developed into a detailed plan setting out clear actions to be undertaken by Dorset Council. We will use the 'Areas for action' as a basis for this but will also draw upon the actions raised through our 'Call for ideas'.

Our **Action Plan** will set out our objectives, specific detailed actions, who in Dorset Council will be responsible, timescales and performance measures. We will also include details of other key partners required to help deliver these actions, the scale of potential carbon savings and the associated co-benefits (health, economy, ecology and resilience).



It is our intention to finalise this strategy with detailed action plans for approval by the Council in the new year (2021).

# NEXT STEPS

## Ensuring we stay on track

As noted in 'Making it Happen' we will finalise our baseline and monitor and report progress annually against our carbon budgets and ecological indicators. These will be our headline indicators.

We will also monitor and track progress against individual actions within our plan and report progress regularly to Dorset Council's Cabinet and senior management. Each year we will review and update our action plans and provide an annual report of progress. We will make sure this is widely promoted to residents and organisations in Dorset.

Things will change. We will be heavily reliant on policy and financial support from the government as well as further technological advancements particularly in the field of hydrogen, battery storage and smart technologies. We will keep track of these rapidly changing developments and adjust our strategy and action plans accordingly.

We will regularly review our overall strategy and approach to ensure it is still relevant and up to date. At a minimum we will update our strategy and refocus as required every 5 years.

OBJECTIVE	CARBON SAVING POTENTIAL	CO-BENEFITS
Decarbonise Dorset Council's estate	✓ ✓ ✓ ✓	   
Develop programme to retrofit energy efficiency, water efficiency, and renewable energy generation across the estate .	✓ ✓ ✓ ✓	   
Complete the conversion of all street-lights and traffic signals to LEDs	✓ ✓ ✓ ✓	  
Implement retro-fit programme across estate	✓ ✓ ✓ ✓	  
Review operational controls on energy using equipment across Council estate to ensure optimum efficiency	✓ ✓ ✓ ✓	 
Invest in enough renewable energy capacity to meet the remaining energy demand after energy efficiency improvements and building-mounted rena-	✓ ✓ ✓ ✓	 

# REFERENCES

Figure 1: © Owen Vachell, Chapmans Pool, photograph, source Dorset AONB

Figure 2: photograph, source Pixabay, <https://pixabay.com/>

Figure 3: © Sedat Ozkanca, Garlic Wood—Near Milton Abbas, photograph, source Dorset AONB

Figure 4: © Dave Penman / Moonfleet Photography, photograph, Source Dorset AONB

Figure 5: Impact of Climate Change on Physical, Mental, and Community Health, table, source U.S. Global Change Research Program, 2016. The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment

Figure 6: © Dave Penman / Moonfleet Photography, Source Dorset AONB

Figure 7: © Dave Penman / Moonfleet Photography, Source Dorset AONB

Figure 8: © Michael Brown, Flower Meadow at Durlston, photograph, source Dorset AONB

Figure 9: Wellbeing map, Dorset AONB / Dorset Council

Figure 10 Wellbeing diagram

Figure 11: Accelerated modern human-induced species losses: Entering the sixth mass extinction Ceballos et al 2015, graph, source <https://advances.sciencemag.org/content/1/5/e1400253> (Science Advances, 19 Jun 2015: Vol. 1, no. 5),

Figure 12: © Michael Brown, Coombe Heath, photograph, source Dorset AONB

Figure 13: © Rosie Mathisen, Seatown - Golden Cap Estate, photograph, source Dorset AONB

Figure 14: © Sian Lister, Totem, photograph, source Dorset AONB

Figure 15: photograph, source Pixabay, <https://pixabay.com/>

Figure 16: photograph, source Pixabay, <https://pixabay.com/>

Figure 17: Table 3, Proportion of net greenhouse gas emissions in each end user sector, UK 2017, Final UK greenhouse gas emissions national statistics 1990-2017 Excel data tables.

Figure 18: Proportion of net greenhouse gas emissions in each end user, table, source BIES

Figure 19: NI 186 - Per capita CO2 emissions in the LA area, source <https://data.gov.uk/dataset/c0f70493-dd62-49a8-8f27-befa1fa70aed/ni-186-per-capita-co2-emissions-in-the-la-area>

Figure 20: Dorset Council baseline emissions diagram, Dorset Council

Figure 21: Emissions pathways, diagram, Dorset Council

Figure 22: Emissions pathways, diagram, Dorset Council

Figure 23: © Dave Penman / Moonfleet Photography, source Dorset AONB

Figure 24: Solar PV installation at Cerne Abbas Village Hall, source Low Carbon Dorset

Figure 25: Clean Earth Energy, Dorset PV installation, photograph, source Low Carbon Dorset

Figure 26: © Nick Bowring, Riversmeet, photograph, source Low Carbon Dorset

Figure 27 and 28: photograph, source Dorset Food & Drink

Figure 29: Dorset Innovation Park, photograph, source Dorset Council

Figure 30: Dorset waste services, photograph, source Dorset Council

Figure 31: © Nick Bowring, Riversmeet aerated shower heads, photograph, source Low Carbon Dorset

Figure 32: © Rosie Mathisen, The Knowle - Looking towards Puncknowle, photograph, source Dorset AONB

Figure 33: © Kevin Freeman, Hambledon Hill, photograph, source Dorset AONB

Figure 34: photograph, source Pixabay, <https://pixabay.com/>

Figure 35: Corporate Priorities, diagram, source Dorset Council

Figure 36: photograph, source Pixabay, <https://pixabay.com/>

Figure 37: Climate Emergency Inquiry Day, photograph, source Dorset Council

Figure 38: Call for Ideas Key Theme Breakdown, diagram, source Dorset Council

Figure 39: Bournemouth University Solar PV installation, photograph, source Low Carbon Dorset

Figure 40: Solar panels on roof, photograph, source Pixabay

Figure 41: Damers' Eco Crew presenting at Climate Emergency Inquiry Day, source Dorset Council

Figure 42: Burning ideas, source Dorset Council

Figure 43: © Owen Vatchell, White Knothe, photograph, source Dorset AONB

# REFERENCES

## Further references:

Ceballos et al: [Accelerated modern human-induced species losses: Entering the sixth mass extinction](#) (Science Advances, 19 Jun 2015: Vol. 1, no. 5)

Gilburn, A.S. et al (2015). [Are neonicotinoid insecticides driving declines of widespread butterflies?](#) PeerJ 3:e1402

RSPB [The State of Nature UK Report 2016](#)

Newton, A.C., Watson, S.C.L., Evans, P., Ridding, L., McCracken, M., Anger-Kraavi, A., and Bullock, J. (2019). [Trends in natural capital, ecosystem services and economic development in Dorset.](#) Bournemouth University

2006 Dorset Environmental Record Centre analysis for Pastures New, a project led by Dorset AONB Partnership

[World Economic Forum 2010: Biodiversity and business risk](#) (authored by PWC) for the WEF Davos-Klosters Annual Meeting

Grosdidier M., Scordia T., Ioos, R., Marçais B (2020) Landscape [epidemiology of ash dieback](#), J. Ecol.

[Reading University Centre for Food Security newsletter](#)

Richardson, M., National Trust (2020) [Noticing Nature](#). University of Derby

[Committee on Climate Change, Net Zero – The UK's contribution to stopping global warming, May 2019](#)

2017 UK GREENHOUSE GAS EMISSIONS, FINAL FIGURES, ONS, 5 February 2019

[NI 186 - Per capita CO2 emissions in the LA area](#) – MHCLG



Dorset  
Council