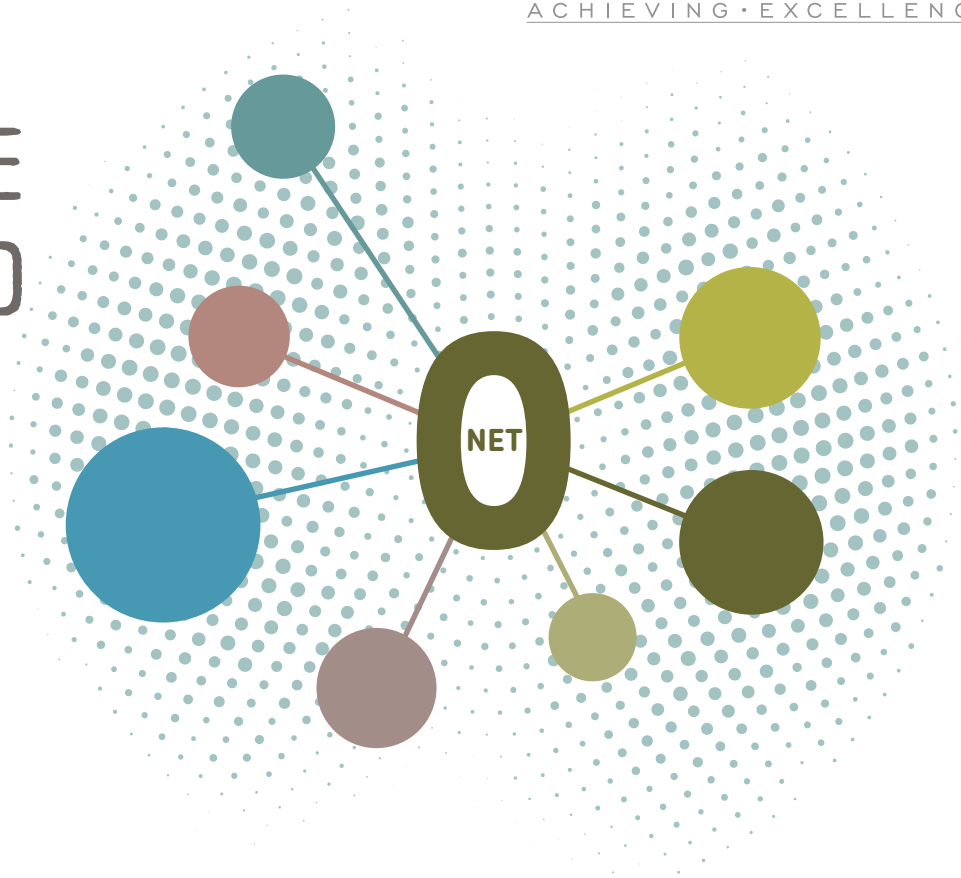
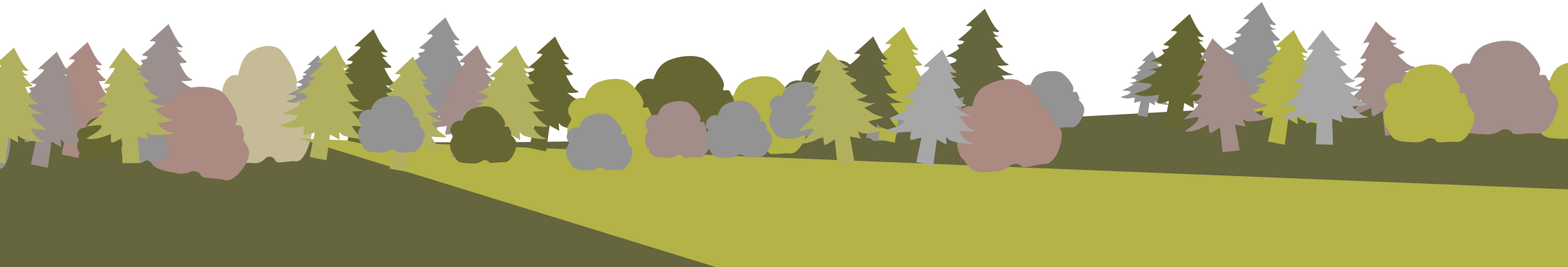
STAFFORDSHIRE moorlands DISTRICT COUNCIL

ACHIEVING · EXCELLENCE

AIMING LOW: THE WAY TO NET ZERO

2021 TO 2030





INTRODUCTION

Cllr Joe Porter –Cabinet Member for Climate Change and Biodiversity, Staffordshire Moorlands District Council

The climate change nature crisis is the greatest threat that we face. It is a threat that impacts on all of us and on future generations. It is a threat that we need to respond to now, tomorrow and the days that follow with an unrelenting focus on preventing the emergencies.

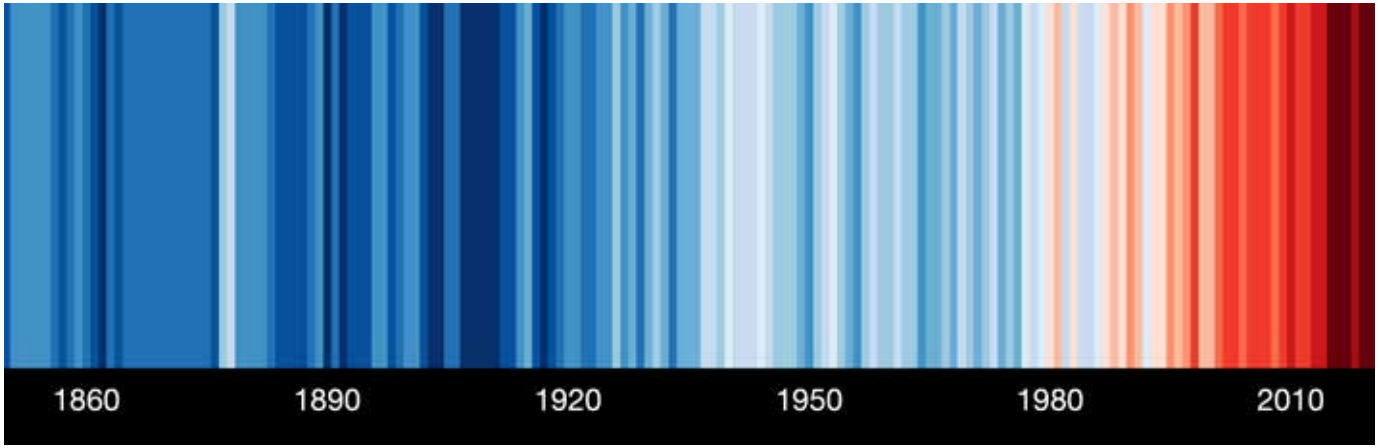
This plan explains how Staffordshire Moorlands District Council will contribute towards Staffordshire Moorlands becoming carbon neutral.

We want to be ambitious, but we must also be realistic about what the district council can and cannot do.

We need everyone to come together to play their part if we are going to meet the ambitious target of becoming Net Zero.

We also need government to continue to build sustainability into key policies and laws such as the National Planning Policy Framework and Building Control Regulations. We need partners such as the County Council, which has responsibility for our roads, transport and education, to take a lead on the areas that they have responsibility for. Importantly, we also need our businesses, residents, community groups and visitors to play their part. We will do what we can to encourage a joined-up approach to tackling this vitally important issue that affects us all.

Please support our plan, we will only be able to tackle these emergencies if we work together. Every action that we can take, no matter how small can help. Let us all do what we can to respond to this global problem.



Title: Earth Warming Stripes 1850-2020, Ed Hawkins, University of Reading

Councillor Sybil Ralphs MBE, Leader of Staffordshire Moorlands District Council

The Council's decision to declare a climate emergency was unanimous and so is our resolve to tackle climate change. It is only by working together that we will achieve our target of being carbon neutral by 2030 – and it is this sense of shared responsibility, collective unity and single purpose that underpins and gives strength to our goal.

Partnership is the key to success and we invite everyone who lives, learns or works in the Moorlands to join us in doing what they can to mitigate the impacts of climate change starting today.

This document is intended to provide information, support and guidance to enable every one of us to play our part. It is amongst the most important things we will ever do.

OUR VISION

Staffordshire Moorlands will become carbon neutral by 2030, taking into account emissions from both production and consumption

OUR MISSION

Encouraging people, businesses and other organisations to do what they can to reduce their carbon footprint and making it easier, where we can, for those changes to happen

OUR STRATEGY

We will use our tools, levers and powers and apply the Carbon Management Hierarchy as we focus on our 7 Ways to Net Zero; applying our values and seeking opportunities to deliver co-benefits.

1 The Way We Live	2 The Way We Travel	3 The Way We Work	4 The Way We Make Energy	5 The Way We Look After Our Environment	6 The Way We Manage Waste	7 The Way We Can Help Change to Occur
Actions						
Support new buildings to be energy efficient and minimise emissions	Reduce emissions from Council vehicles	Reduce emissions from Council buildings	Look at generating green energy for Council buildings	Increase tree cover and improve nature	Reduce carbon emissions from our waste and recycling service	Consider Climate Change in all Council decisions and policies
Tackle fuel poverty and reduce emissions from homes	Support sustainable travel and development	Switch to green energy	Promote the use of renewable energy	Protect and extend the existing green infrastructure	Encourage recycling and the green initiatives	Provide Councillors and staff members with appropriate skills and training
	Support the increased use of EV vehicles	Buy low carbon products and services		Reduce the risk from flooding	Support community initiatives designed to reduce, recycle and repurpose waste	Promote climate change projects
	Encourage people to make journeys by walking or cycling	Support the green economy		Work in partnership with our communities, including the most vulnerable		Encourage community climate change and nature projects
		Support the development of a circular economy				Work with Parish Councils
		Help businesses to get advice and support				Involve and engage our communities and create a more inclusive society
		Encourage Council staf to adopt energy saving/low carbon				Lobby for change

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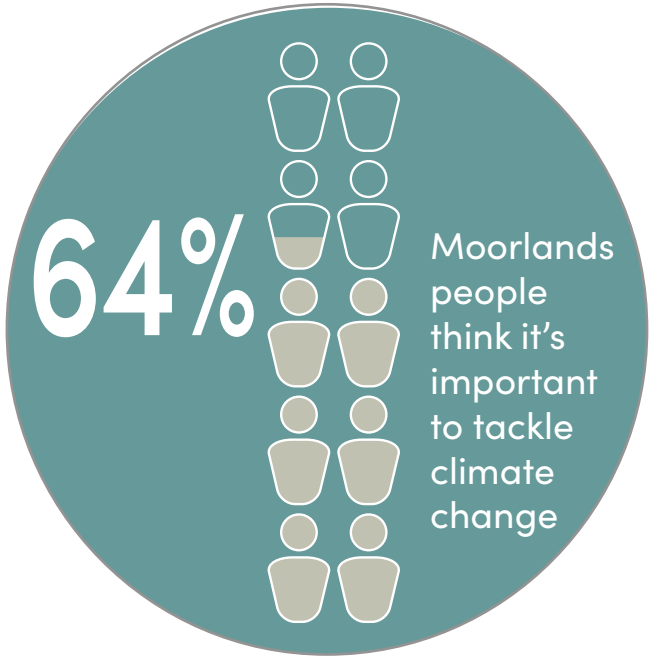


CLIMATE CHANGE - OUR STRATEGY

Climate change is the greatest threat to our future existence. It is a global problem that requires global solutions. We know that we cannot solve the problem on our own, but we can take a lead role in our district and use our powers and influence to support wider local action to reduce emissions and prepare for a changing climate.

The District Council declared a climate emergency on 10th July 2019 following unanimous, cross-party backing, and committed to:

'Start working with partners, across the district and region, towards making the Staffordshire Moorlands carbon neutral by 2030; taking into account emissions from both production and consumption'.

The declaration recognises that we need to work together, in partnership, to respond to the challenge of the climate change emergency.

It will require the Council to change the historic ways of heating and powering our buildings and vehicles, and the goods and services that we procure, when providing essential services for our communities.

We will need to adopt zero and low carbon alternatives and put climate change at the centre of our decision making.

In July 2021, the Council took the important step of approving its first Climate Change plan to set out how it intends to reduce emissions generated by the Council's activities.

But reducing the Council's emissions is only a small part of the solution. We need to come together as district, so that all our residents, community groups and businesses are working together to respond to the emergency.

> **"It comes down, I think, to us each taking responsibility for the personal choices in our everyday lives. That's all any of us can be expected to do. And it is those everyday choices that add up"**

Dr Jon Copley, University of Southampton

This plan sets out the role that the District Council can play in encouraging this collective action, from ensuring that local plans support sustainable development, to working in partnership with other organisations, to promoting good ideas and supporting our local community to get involved.

The plan sets out the first steps of the journey. We will update it over time to take advantage of new ideas and opportunities, and to respond to any new legislation and guidance, funding opportunities or challenges. It's the first steps of a long journey but we believe that we can get there if we work together.

- We recognise the global climate emergency.
- We are committed to keeping global heating below the 1.5°Celsius goal of the Paris Agreement.
- We are committed to putting inclusive climate action at the centre of our decision-making to create thriving and equitable communities for everyone.
- We pledge to reach Net Zero by 2030 in line with global efforts to limit warming to 1.5°Celsius.
- We invite our partners – political, business and community leaders; statutory organisations; trade unions; civic society and community members – to join us in recognising the global climate emergency and help us deliver on science-based action to overcome it.
- We invite everyone within Staffordshire Moorlands to act today and implement at least one measure to reduce their carbon footprint.

OUR CHALLENGE

GLOBAL RISKS

In 2020, the World Economic Forum (WEF) identified the top 5 global risks based on their likelihood of happening. All of the top 5 were environmental: extreme weather, climate action failure, natural disasters, biodiversity loss, and human-made environmental disasters. No environmental risk made the top 5 prior to 2011.

Three of the WEF's top five global risks based on the impact that they would have were also environmental (climate action failure, biodiversity loss and extreme weather). The societal impact of water crises also featured in the top 5, alongside the risks associated with weapons of mass destruction.

The Global Risks Report 2020, World Economic Forum

Greenhouse gases – or GHGs - are released during many of the activities that we do day-to-day, such as driving petrol cars or heating homes. It is also released – or emitted - by industry. We call these 'emissions'. Carbon dioxide (CO_2) is the most common GHG that is created by human activity– mainly through the burning of fossil fuels such as coal and gas. CO_2 tends to remain in the atmosphere for hundreds of years.

The amount of Greenhouse gases from human activity have increased sharply since the industrial revolution especially in recent decades. This tips the 'carbon cycle' (where natural emissions of CO_2 equal those removed) out of balance and increases the amount in the atmosphere.

GHGs trap heat in the atmosphere. The amount of CO_2 in the atmosphere is now at its highest in several million years, and research shows that the heat trapped by this and other GHGs is increasing the average global temperature. This is called global warming..

"Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide (CO_2) and other greenhouse gas emissions occur in the coming decades"

Climate Change 2021: The Physical Science Basis, Intergovernmental Panel on Climate Change (IPCC).

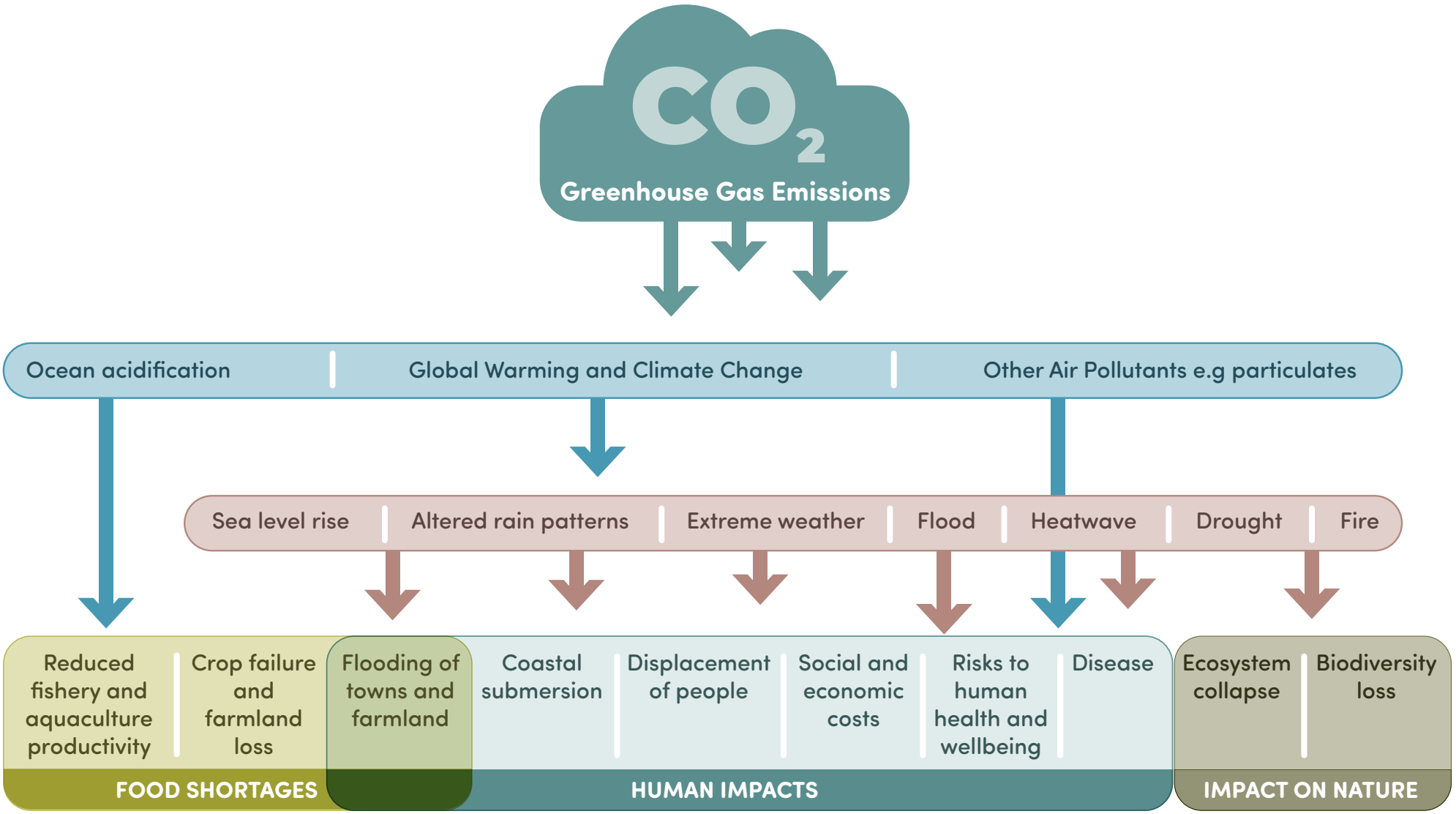
Climate change is the changes in global weather patterns that are driven by global warming. The risks from climate change include:

- Extreme weather events.
- Environmental and economic damage.
- Further sea level rise as major ice sheets melt.
- Risks to health and wellbeing from poor equality, exposure to extreme temperatures, etc.
- Severe impacts on the world's poorest and most vulnerable populations.
- Disruption and irreversible loss of natural habitats and resources.

A GLOBAL PROBLEM – LOCAL IMPACTS

- Extreme weather events increase the risk of flooding and damage to the transport network. For example, the River Churnet burst its banks in several areas in 2019 leading to flooding of an industrial estate, golf course and other areas and suspension of services by Churnet Valley Railway. Surface water also blocked several major roads throughout the district.
- Increasing temperatures and severe weather events induced by climate change will directly and indirectly result in habitat alterations and increase the vulnerability of animal and plant species. Sphagnum moss is especially susceptible to environmental changes and faces extinction in the event of severe climatic changes. By 2080, climate change may result in the loss of moorland birds, such as merlin and golden plover, from the Dark Peak.
- Drier conditions may result in rivers and streams becoming increasingly seasonal and at risk of drying up, with the risk of losing ponds altogether, especially dew ponds. The danger of wildfires also increases as peat soils dry out and woodlands suffer from summer drought. In the summer of 2018, major fires broke out in the Thorncliffe and Roaches area of the district. Residents were evacuated and it estimated that the Roaches fire released over 11,000 tonnes of carbon dioxide (CO_2), equivalent to running 1,426 homes for one year.

IMPACTS OF CLIMATE CHANGE



GLOBAL

Each of the last four decades has been successively warmer than any decade that preceded it since 1850. Global surface temperature was 1.09°C higher in 2011–2020 than 1850–1900. Models predict that Earth will warm between 2 and 6°C in the next century.

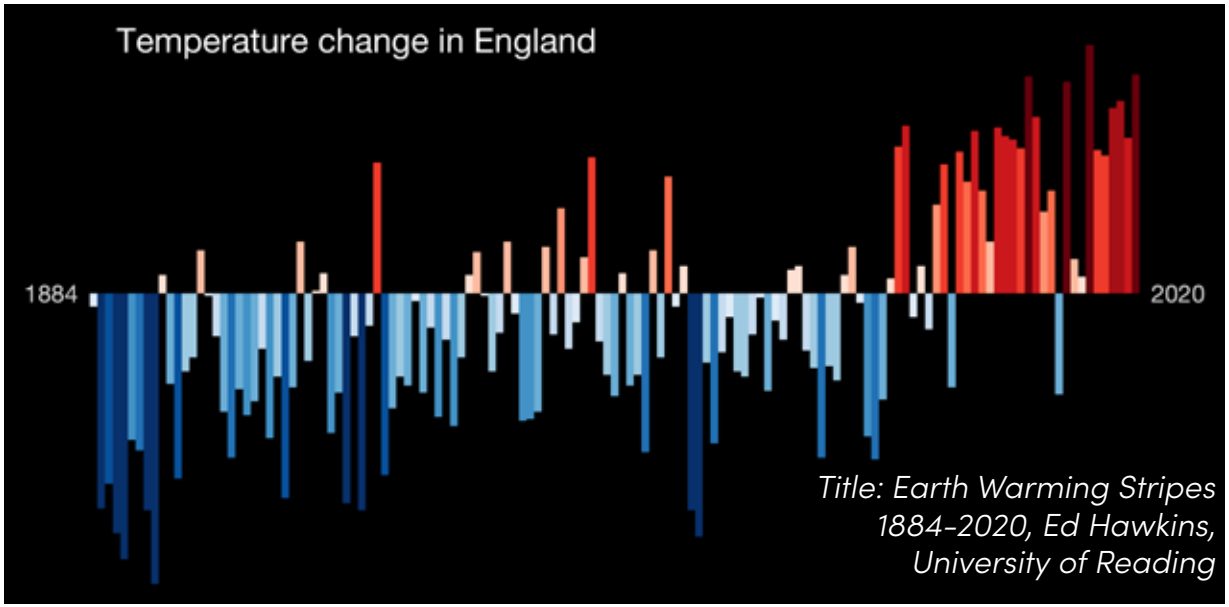
The levels of emissions have increased dramatically since the end of World War II. The fastest rate of increase in the 20th century was in the 25 years leading up to 1970, with an annual average rate of more than 5%. Since 1970 it has been around 2%.

UNITED KINGDOM (UK):

In 2018, UK emissions were estimated to be 451.5 million tonnes carbon dioxide equivalent ($MtCO_2e$).

The UK's ten warmest years on record have occurred since 2002 and seven of the ten wettest years on record have happened since 1998.

Heatwaves are now 30 times more likely to happen in the UK due to climate change and the Met Office predict that, at current rates, heatwaves in the UK can be expected to happen every other year by 2050. Winter storms are at least 40% more likely because of climate change.



Title: Earth Warming Stripes 1884-2020, Ed Hawkins, University of Reading

WHAT THE UK THINKS ABOUT CLIMATE CHANGE

Eight in ten people (80%) in March 2021 were either very concerned (33%) or fairly concerned (47%) about climate change[1]

Among all people apart from the 1% who did not believe in climate change[1]:

- Over six in ten (63%) thought that climate change is already having an effect in the UK.
- Half (49%) thought that climate change is currently affecting people in their local area, 70% thought it was affecting people in the UK and 83% thought it was affecting people in other countries.
- The impacts people most expected to occur over the next 15 to 20 years are rising sea levels or more flooding (63%), rising temperatures or hotter summers (60%) and more extreme events such as storms (60%).

Almost half (46%) of UK citizens consider climate change to be an urgent priority that requires action immediately, with a further 28% considering it a pressing issue that needs addressing in the next 5-10 years[2].

53% of people believe that individuals can have a big or fairly big impact on climate change, 41% believed that they could have not much or no impact at all, and 6% didn't know[3].

Climate change is a topic of high concern to rural citizens (87%). 60% of rural citizens think that we are already feeling the effects of climate change (56% urban).[4]

1 BEIS Public Attitudes Tracker (March 2021, Wave 37, UK); 2 ICARO Attitudes to climate change in the UK Key findings, September 2020; 3 YouGov, August 2021; 4 Britain Talks Climate, 2020

UK greenhouse gas emissions are estimated to have fallen by 49% between 1990 and 2020 (but this does not include emissions linked to the production of goods that are consumed in the UK but produced abroad or the UK's 'share' of emissions from international aviation and shipping). Half of the total cut in emissions since 1990 were from the energy supply sector (mainly power generation). Gas replaced coal for electricity generation during the 1990s, renewables (especially wind) grew in the 2010s and coal use has fallen further in recent years to just 2% of generation. Energy supply emissions are now below those from transport which have not changed very much since 1990.

STAFFORDSHIRE MOORLANDS

In 2018, Emissions from Staffordshire Moorlands totalled 905 $ktCO_2e$. The majority resulted from buildings (61%), on-road transport (19%) and livestock (22%).

Sub Sector	Direct, $ktCO_2e$	Indirect, $ktCO_2e$
Residential buildings	123.20	46.17
Commercial buildings & facilities	22.71	38.08
Institutional buildings & facilities	18.28	8.27
Industrial buildings & facilities	235.13	46.48
Agricultural fuels	-	-
Fugitive emissions	13.91	-
On-road	147.06	IE
Rail	0.00	IE
Waterborne navigation	1.38	IE
Aviation	0.00	IE
Off-road	1.47	IE
Solid waste disposal	6.04	-
Biological treatment	NO	-
Incineration and open burning	NO	-
Wastewater	5.79	-
Industrial process	40.00	-
Product use	0.00	-
Livestock	169.50	-
Land use	-18.72	-
Other AFOLU	NE	-
Electricity-only generation	NO	-
CHP generation	NO	-
Heat/cold generation	NO	-
Local renewable generation	0.40	NO
Sub-total	766.14	139.00
Grand total	**905.14**	

IE	= Included Elsewhere
NE	= Not Estimated
NO	= Not Occurring
	Included under BASIC framework
	Included under BASIC+ framework

KEY STATISTICS AT A GLANCE – STAFFORDSHIRE MOORLANDS

An annual reduction rate of 12.4% is recommended to keep Staffordshire Moorlands aligned with Paris Agreement targets

According to BEIS statistics, between 2005 and 2019 the average annual emissions reduction rate in Staffordshire Moorlands figure was just over 2%

If Staffordshire Moorlands continue along a business-as-usual scenario, the carbon budget (2020 – 2100) will be exceeded by 2027

WHAT THE MOORLANDS THINKS ABOUT CLIMATE CHANGE

Over eight out of ten people (86%) said that they were very concerned (45%) or a little concerned (41%) about climate change.

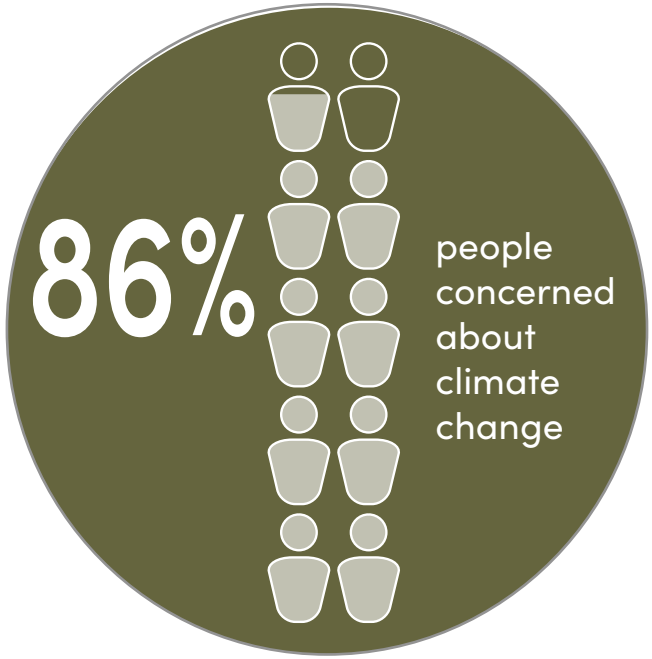
Six out of ten (64%) thought that it was extremely important (26%) or very important (38%) to tackle climate change.

People were most concerned about climate change leading to the loss of animals, plants, habitats and biodiversity in the District (63% were very concerned), extreme weather (63%); and environment destruction (52%).

Respondents said that more information (45%) and advice (45%) would help them to tackle climate change.

The actions that people thought would be important for tackling climate change were minimising single use plastic (89% said this was very important); encouraging the reuse, repurposing and recycling of waste materials (84%); and making sure that new houses are energy efficient (81%).

Future Focus Research surveyed 500 people, selected randomly from across the district, in September 2021 on behalf of Staffordshire Moorlands District Council.



OUR RESPONSE

KYOTO

11 DECEMBER 1997:

Developed nations pledged in the Kyoto Protocol to reduce emissions by an average of 5% by the period 2008-12.

PARIS

12 DECEMBER 2015:

The Paris Agreement - a legally binding international treaty on climate change- was adopted. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.

Why 1.5?

Climate Change and Biodiversity:

Limiting global warming to 1.5°C above pre-industrial levels avoids half the risks associated with warming of 2°C for plants, animals, and insects in terms of climate change induced range loss.

Climate Change and Human Health:

With 1.5°C of future global warming, many tropical and sub-tropical regions will face extreme risks to population health from heat stress. These risks become widespread in these regions with temperature increases of 2.5°C to 3°C.

Climate Change and Sea Level Rise:

Global sea level rises are predicted to rise by up to 52cm by 2100 with a temperature rise of 1.5°C and up to 63cm for a 2.0°C rise. The additional 11 cm of sea level rise is projected to result in additional global annual flood costs of US$ 1.5 trillion per year (0.25% of global GDP) without adaptation. Flood cost for UK is projected to increase from 2.5% of GDP (1.5°C) to 4% GDP(2°C).

Tyndall Centre for Climate Change Research 2018, The implications of global warming of 1.5°C and 2°C

UK

26TH NOVEMBER 2008:

The Climate Change Act 2008 was introduced to ensure that the net UK carbon account for all six Kyoto greenhouse gases for the year 2050 is at least 80% lower than the 1990 baseline.

27TH JUNE 2019:

The UK government amended the Climate Change Act and set a legally binding target to achieve net zero greenhouse gas emissions from across the UK economy by 2050 with five yearly carbon budgets to set actions and review progress.

STAFFORDSHIRE MOORLANDS

19 JUNE 2018

Staffordshire Moorlands District Council approved the adoption of a Staffordshire Moorlands Green Infrastructure Strategy to support the Local Plan.

10TH JULY 2019:

The Council declared a climate emergency and agreed to work with partners across the district and beyond to make Staffordshire Moorlands carbon neutral by 2030.

This means that by 2030 any greenhouse gas emissions from the district must be balanced with an equivalent amount of emissions that are collected and stored in a way that keeps them safe (sequestered) or offset. If we do this, we become a carbon neutral district with a net zero carbon footprint.

8 OCTOBER 2019:

The Council approved a new corporate plan (2019-23) that included "Protect and improve the environment and respond to the climate emergency" as one of the four aims of the Council. The Council's corporate plan has previously included aims around improving the environment, but this is the first time that climate change has been specifically named a key aim. This demonstrates the Council's commitment to putting climate change at the heart of its activities.

27 JANUARY 2021

Working with Staffordshire Wildlife Trust, the Council published the results of the mapping of opportunities for enhancing habitats and their connectivity, and a first draft schedule of green infrastructure delivery projects.

29 JUNE 2021:

The District Council approved its 2021/22 Climate Change Plan (Part 1), which focussed on reducing the Council's own emissions.

Following the declaration of a climate emergency, the Council introduced a Climate Change Sub Committee to help develop its plans. Working groups met to look at district greenhouse gas emissions from Council activity, housing, industry, agriculture, land use and biodiversity, waste, and energy production. These working groups gathered evidence from many outside agencies and experts to identify actions that could reduce emissions.

A group of Council Officers also met to develop ideas and create the plan.

We also considered information from the following sources when creating our plan:

- Research conducted on our behalf by Anthesis
- The results of a Climate Change Attitude carried out in September 2021.
- Consultation with DEFRA, UK100, APSE, businesses, Keele University and other stakeholders, and other meetings conducted by the Cabinet Member for Climate Change and Biodiversity.
- A review of national and international guidance, and local authority plans from across the country.

The Council has reviewed its structures and the skills and capacity of the workforce that are needed to deliver its plans. It will also build the cost of delivering the Council's actions within the plan into the Council's annual budget and Medium-Term Financial Plan.

The Council carries an earmarked reserve set aside for initiatives responding to the Climate Emergency. This reserve is available to provide the funding for unbudgeted in-year spend developing projects designed to further the Council's ambitions around climate change. Once specific projects have been developed (and their business case signed off); the necessary budget requirements can be incorporated into the Medium Term Financial Plan.

OUR APPROACH

Our Vision:
Staffordshire Moorlands will become carbon neutral by 2030, taking into account emissions from both production and consumption

Local authorities have powers or influence over roughly a third of emissions in their local areas and UK100 estimate that local authorities are responsible for around 6% of emissions. For Staffordshire Moorlands, the local authorities are Staffordshire Moorlands District Council, Staffordshire County Council, and the Peak District National Park Authority.

"More than half of the emissions cuts needed rely on people and businesses taking up low-carbon solutions – decisions that are made at a local and individual level. Many of these decisions depend on having supporting infrastructure and systems in place. Local authorities have powers or influence over roughly a third of emissions in their local areas"

Climate Change Committee, Local Authorities and the Sixth Carbon Budget, December 2020

This means that we all have a part to play in tackling climate change. We see our role as a district council to be to encourage people, businesses and other organisations to do what they can to reduce their carbon footprint and make it easier, where we can, for those changes to happen.

Our Mission:
Encouraging people, businesses and other organisations to do what they can to reduce their carbon footprint and making it easier, where we can, for those changes to happen.

The national Climate Change Committee is an independent, statutory body that has set out the different methods that local authorities can use to control and influence emissions and tackle climate change.

- **Direct Control:** the Council's own buildings, operations, travel
- **Procurement and commissioning** & commercialisation
- **Place shaping:** using powers to control development and transport (transport is a County Council function along with things like highways and education)
- **Showcasing:** innovating, piloting, demonstrating and sharing good practice, scaling and replicating
- **Partnerships**: leading, bringing people and organisations together, co-ordinating and supporting others, joining others' partnerships
- **Involving, Engaging and Communicating:** translating global & national climate change targets for local relevance; with stakeholders to raise awareness, involving people ad ideas for local solutions

We have used this list as a framework for creating our plans to achieve net zero in Staffordshire Moorlands by 2030.

> "As much as 62% of the future reduction in emissions will rely on individual choices and behaviours, from day to day lifestyle choices to one off purchases such as replacing boilers that use fossil fuels or buying an electric vehicle".

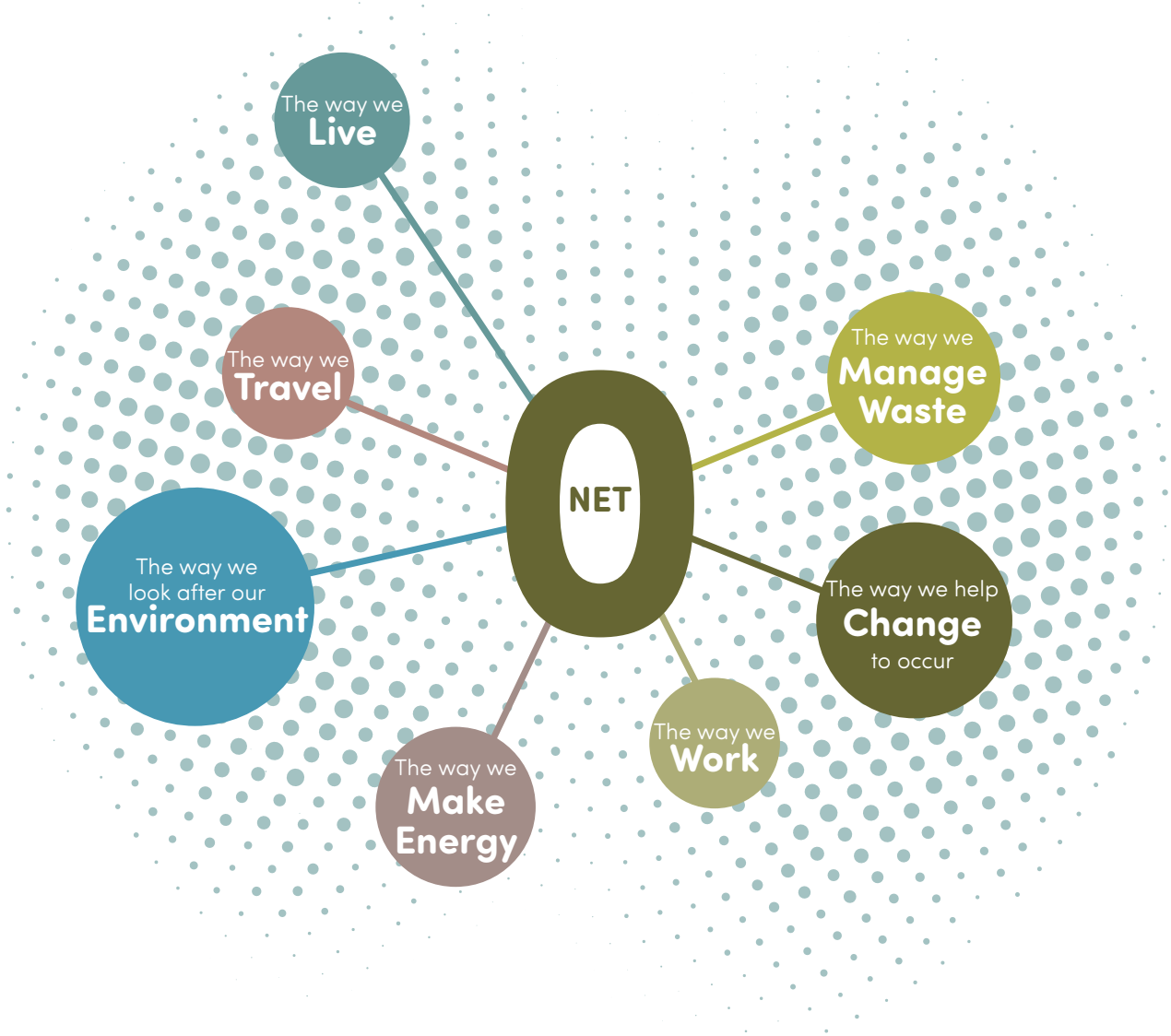
House of Commons Public Accounts Committee 2021, Achieving Net Zero

> "The public need to be involved – over half the emissions reductions we identified to reach Net Zero actively involve people, whether by choosing to purchase low-carbon technologies like electric cars, or by making different choices, for example on their travel and diets."

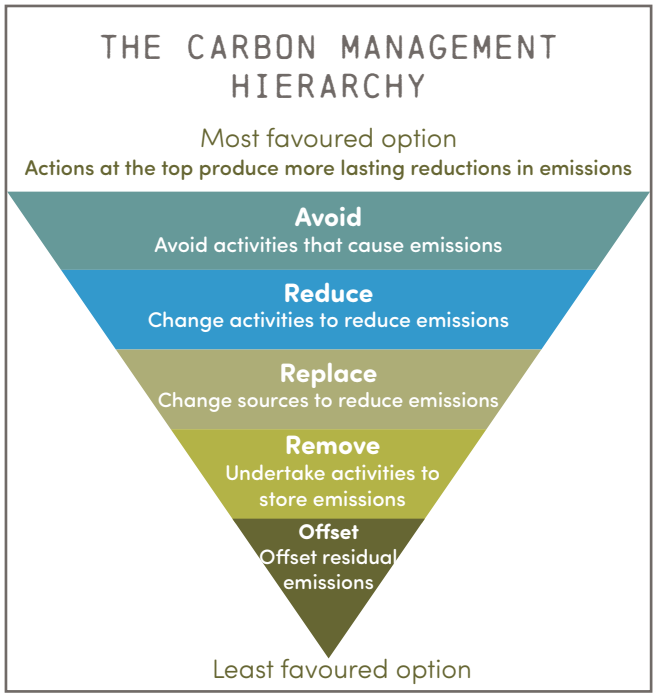
Climate Change Committee 2020, The Sixth Carbon Budget: The UK's path to Net Zero

We believe that we can meet our aim of becoming a carbon neutral Council – sitting within a carbon neutral district – by 2030 if we focus our actions on 7 Ways to Net Zero.

- The Way We Live
- The Way We Travel
- The Way We Work
- The Way We Make Energy
- The Way We Look After Our Environment
- The Way We Manage Waste, and
- The Way We Can Change to Occur.



Some actions that we can take are better than others at producing more lasting reductions in emissions. We call this the Carbon Management Hierarchy. In our plan, we will look at ways of avoiding emissions before we think about ways of removing or offsetting.



We acknowledge that climate change is a 'grand challenge' but it also presents opportunities. This includes improving people's health and wellbeing through active travel and cleaner air, using nature-based solutions to improve people's quality of life, tackling deprivation by addressing food and fuel poverty, improving our natural environment through the protection and expansion of green spaces; and delivering economic growth and creating jobs. These are often referred to as the co-benefits of tackling climate change. We will look for opportunities to deliver co-benefits wherever possible.

Clean growth is one of the four Grand Challenges set out in the UK's Industrial Strategy.

> **"We will maximise the advantages for UK industry from the global shift to clean growth – through leading the world in the development, manufacture and use of low carbon technologies, systems and services that cost less than high carbon alternatives."**

HM Government, Industrial Strategy, Building a Britain fit for the future

OUR VALUES

We will:

- Put climate change at the heart of our decision making.
- Base our decision-making on science and best practice wherever possible.
- Promote awareness of climate change and the best practices for responding to it.
- Create a framework to enable people and organisations to take action to address climate change.
- Focus our actions on those areas under our control and where we can have the greatest impact, whilst seeking to influence the behaviour of actions of others.
- Focus our efforts on delivering the actions within our action plan whilst also taking of advantage of any opportunities to apply for funding to support local action to respond to the Climate and Nature emergency.
- Identify and take advantages of the co-benefits of addressing the Climate and Nature emergency, such as improving physical health and mental wellbeing, achieving economic growth and alleviating poverty.
- Support the voluntary and community sector to deliver community-led projects and activity.
- Give priority in responding to climate change to the needs of vulnerable groups who are most at risk to the adverse effects of climate change, including food and fuel poverty, and lack of access to green space.
- Put inclusive climate action at the centre of our decision-making to create thriving and equitable communities for everyone.
- Embed fairness as a core principle and seek to ensure that the benefits of acting on climate change are shared widely, and that the costs do not burden those who are least able to pay, or whose livelihoods are most at risk as the economy changes.
- We invite our partners – political, business and community leaders; statutory organisations; trade unions; civic society and community members – to join us in recognising the global climate emergency and help us deliver on science-based action to overcome it.

Our Strategy:
We will use our tools, levers and powers and apply the Carbon Management Hierarchy as we focus on our 7 Ways to Net Zero; applying our values and seeking opportunities to deliver co-benefits.

OUR FEEDBACK

We will provide regular updates on what we have achieved throughout the year and a final update once each year has ended.

This will include an annual report to the Council's Communities Overview & Scrutiny Committee on the progress that has been made towards delivering the plan. This Committee, which is made up from Councillors from all local political parties, has the power under the Local Government Act 2000 to review and scrutinise the actions and decisions of the Council.

We will also present reports to the Committee on specific actions within our plan, such as the introduction of new policies or strategies, and the delivery of projects. Information about the delivery of the plan will also be included within the Council's quarterly performance reports.

The Council's reports are available on the Council's website and members of the public can watch the committees either in person or on-line.

We will also seek ways of talking directly with our communities throughout the year.

OUR TO DO LIST

We know that our plans will need to change as the climate emergency landscape inevitably shifts over time. With that in mind, we will make sure that we review our plans regularly so that they remain fit-for-purpose. We will update our website whenever we make changes to our plan.

In the next 12-months we will also:

- Further develop our approach to target setting including milestones for action. The release of the Census 2021 data will help us to establish baselines.
- Enhance our monitoring procedures to make sure that the actions that we are taking are having an impact
- Embed Climate Change activity within the Council's annual budget and Medium-Term Financial Plan.
- Deliver the actions under Aim 4 of our corporate plan (Aim 4: To protect and improve the environment and respond to the climate emergency)
- Include mandatory Carbon Literacy/ Awareness training for all new Council employees
- Analyse the Council's procurement emissions[1]
- Conduct a district-wide pathway analysis[1]
- Hold a series of workshops to further develop a picture of 'how' various measures are implemented across the district and the Council's role in these[1].

1 Anthesis – who are the leading sustainability experts globally – have been commissioned to undertake this work on behalf of the Council.

THE WAY TO NET ZERO - OUR PLAN

1 THE WAY WE LIVE

WHY IS THIS A PRIORITY?

Emissions from residential buildings totalled 169 $ktCO_2e$ within Staffordshire Moorlands in 2018. This figure estimates emissions arising from the consumption of energy in residential buildings of all types and tenures, including social housing, rented accommodation and privately-owned properties.

The most significant source of emissions from households comes from the use of energy for heating and hot water. Most of this is achieved through natural gas consumption, with gas demand for heating making up 51% of residential building emissions. The second most significant source of emissions is the use of grid supplied electricity to the district for lighting, appliances and cooking, which makes up around 19% of residential emissions. The remainder is made up of small contributions from other fuel types.

In 2019, official figures show that 16.2% of households in Staffordshire Moorlands were living in fuel poverty (compared to an average of 13.8% for the whole of England).

WHAT ARE OUR TARGETS?

10% of households will be living in fuel poverty by 2025 and 0% by 2030.

There will be Net Zero emissions from residential buildings by 2030.

Proportion of properties with an EPC (target to be established).

Proportion of properties EPC with rating D to G (target to be established).

1	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
Place shaping						
1.1	We will make sure that new buildings and other development within the District have high levels of energy efficiency and minimise carbon emissions	Review the Local Plan to further increase the focus on climate change	Review policies by September 2025	Revised Local Plan approved with increased focus on climate change	Clarity needed from Government regarding their reforms of the planning system which will determine the scope and role of Local Plans in tackling climate change.	Head of Development Services
		Produce a Developer Contributions Supplementary Planning Document to consider scope for guidance on S106 agreements that can negotiated under the current Local Plan. This work will consider the scope for climate change measures that can secured in the short/ medium term under current policy	2022	Increased funding secured to support climate change adaptation and mitigation measures.	Scope for developer contributions is limited by the viability of development.	Head of Development Services
		We will introduce a locally focussed Climate Change and Sustainable Design Supplementary Planning Document or other appropriate planning guidance to shape all future developments and ensure that they support us to meet our climate objectives	March 2023	Supplementary Planning Document or Guidance introduced Increased awareness of opportunities to address climate change through developments		Head of Development Services

1	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
1.2	We will support action including retrofitting to reduce fuel poverty, prevent health hazards relating to damp and excess cold. and reduce emissions from homes	We will update the Council's private sector housing policy to include a greater emphasis on improving energy efficiency in privately rented housing.	December 2022	Revised Private Sector Housing Policy approved with increased focus on sustainability		Head of Regulatory Services
		We will enforce Minimum Energy Efficiency Standards (MEES) in the private rented sector	On-going	Number of enforcement actions		Head of Regulatory Services
		Examine opportunities for the Council to train assessors and coordinators in the PAS 2035 standard	December 2022	Policy produced		Head of Assets
Partnerships						
1.3	We will work in partnership to combat fuel poverty, help residents to heat their home and address the public health consequences of climate change.	We will support the Staffordshire Warmer Homes Scheme	On-going	Number of properties supported		Head of Communities and Climate Change

1	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
1.4	We will support action to reduce school-related carbon emissions	We will encourage the County Council to support schools to cut carbon, such as by participating in the LESS CO_2 programme and accessing Salix finance, and to ensure that school meals are delivered in accordance with the official Eatwell Guide	On-going	Reduced emissions from schools		Head of Communities and Climate Change
1.5	Supporting the development of zero carbon buildings	We will develop a roadmap to achieve net zero carbon new buildings from 2030	2022			Head of Development Services
Involving, Engaging and Communicating						
1.6	Encourage the insulation of existing homes across the District as well as the installation of other green energy solutions	We will use our influence to strongly promote any successor schemes to the Green Homes Grant	On-going		This depends upon the introduction of successor schemes	Head of Development Services

2 THE WAY WE TRAVEL

WHY IS THIS A PRIORITY?

Transport is the largest emitting sector of greenhouse gas (GHG) emissions, producing 27% of the UK's total emissions in 2019. Of this, the majority (91%) came from road transport vehicles. The biggest contributors to this were cars and taxis, which made up 61% of the emissions from road transport, followed by Heavy Goods Vehicles (HGVs) (18%) and vans (17%).

International aviation emissions (which are not counted towards the UK's total domestic emissions) have more than doubled in the period 1990- 2019 (a 138% increase).

Emissions from transport totalled 150 ktCO_2e in 2018. On-road transport dominates the emissions in this sector; Department for Transport data indicate that over 4.7 billion vehicle miles were driven across the district's roads in 2018. The proportion of electric vehicles in the district has grown significantly in recent years, but still constitutes less than 1% of the overall number of registered vehicles.

Approximately 79% of people aged 16-74 in the Staffordshire Moorlands to work by driving a car or van.

WHAT ARE OUR TARGETS?

37.5% of commuter journeys will be made by public transport, cycling and walking by 2025 and 40% by 2030.

There will be Net Zero vehicle-related emissions by 2030

2	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
Direct Control						
2.1	We will reduce emissions from Council vehicles and Council-related activity	We have set out our approach in our SMDC Climate Change Plan The District Council has also signed up the Cycle to Work Scheme				Head of Commissioned Service Head of Transformation
Place shaping						
2.2	We will reduce transport-related emissions by encouraging sustainable development	As part of the next review of the Local Plan, consider further opportunities for supporting electric vehicles as well as ensuring that future developments are well[1] connected to bus routes and walking and cycling networks	Policies reviewed to see if updates are required by September 2025	Revised Local Plan approved with increased focus on reducing travel and transport related emissions		Head of Development Services
		We will consider the promotion of cycling and walking routes during the development of all Masterplans	On-going	Number of Masterplans that mention active travel		Head of Regeneration
2.3	We will encourage and support the increased use of EV vehicles	We will support the development of a County EV charging point strategy and installation plan for the District	TBD	Asset Management Strategy	Baseline data for other buildings to be assessed by December 2021. Review of assets completed and plan developed by April 2022	Head of Assets

2	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
Partnerships						
2.4	We will work in partnership to reduce travel and transport related emissions	We will support the County Council to deliver measures for tackling climate change within their District Integrated Transport Strategy 2018-2031 for Staffordshire Moorlands. We will encourage and support Staffordshire County Council to take action to encourage sustainable travel including, - improving pedestrian and cycle routes across the district -implementing SCC's Air Aware Scheme, which aims to improve air quality and promote active travel -Establishing a Business Travel Network (BTN) in Leek	Policies reviewed to see if updates are required by September 2025	Revised Local Plan approved with increased focus on reducing travel and transport related emissions		Head of Development Service Head of Regulatory Services

3 THE WAY WE WORK

WHY IS THIS A PRIORITY?

The most significant contributor to Staffordshire Moorlands' emissions is the non-residential buildings sector, totalling 383 $ktCO_2e$ across commercial, institutional and industrial buildings in 2018.

The most significant source of emissions from non-residential buildings is coal consumption in industrial buildings. Contributions from coal consumption make up approximately 35% of all non-residential buildings emissions. As with residential buildings, the next most significant contributions to these totals is natural gas consumption for heating and hot water (around 16%) and electricity for appliances, lighting and cooking (around 20%).

Industrial processes (emissions from all non-energy related processes in industrial facilities, such as manufacturing and production of chemicals, metals and minerals) accounted for 40 $ktCO_2e$ in 2018.

WHAT ARE OUR TARGETS?

There will be Net Zero emissions from non-residential buildings by 2030

1	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
Direct Control						
3.1	We will reduce energy use and improve the energy efficiency of Council buildings including Leisure Centres	We have set out our approach in our SMDC Climate Change Plan				Head of Assets
3.2	We will switch the Council's energy supply to 100% green energy	We have set out our approach in our SMDC Climate Change Plan				Head of Assets
Procurement and commissioning & commercialisation						
3.3	We will reduce the number of products purchased by the Council, chose low carbon/carbon neutral products where possible, and seek to use contractors who are working towards carbon neutrality	We have set out our approach in our SMDC Climate Change Plan				Head of Commissioned Services
Partnerships						
3.4	We will seek to influence local economic priorities and activities to drive growth of the green economy and creation of local, green jobs. This will include supporting our vulnerable communities and those who will be most harmed by climate change.	Work with the Local Enterprise Partnership, Chamber of Commerce, to ensure that their decisions are in line with the rapid growth of the green economy, climate reduction pathways and nature restoration plans.		Number of local, green jobs created		Head of Regeneration

1	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
3.5	We will support work aimed at promoting a circular economy	We will promote a circular economy though our annual procurement event and through our implementation of the Employment Charter	On-going	Businesses engaged at events		Head of Regeneration
Involving, Engaging and Communicating						
3.6	Provide advice and support to businesses	We will signpost people to appropriate sources of information via our website	March 2022	Information posted on Council website		Head of Regeneration
3.7	Encourage and enable energy saving/low carbon behaviour by all council staff	We will deliver campaigns aimed at reducing energy consumption and carbon emissions. This will include delivering 'carbon literacy' training to help staff members to identify opportunities for cutting carbon are maximised throughout council services.	On-going	Number of campaigns delivered. % of carbon literate staff. Reduction in Council emissions.		Head of Transformation

4 THE WAY WE MAKE ENERGY

WHY IS THIS A PRIORITY?

Greenhouse gas (GHG) emissions from the power sector were 65 $MtCO_2$ in 2018, which is 15% of the UK total. These emissions come from the burning of coal and gas for electricity, with a small proportion from oil and other small-scale embedded generation: Gas plants contribute to 70% of power emissions. They provide 40% of total electricity generation. Coal accounts for 23% of emissions but only 5% of generation. The remaining 7% of emissions come from oil and a variety of other small generation sources (Climate Change Committee, The Sixth Carbon Budget: Electricity generation)

We will establish a baseline during 21/22.

WHAT ARE OUR TARGETS?

The amount of renewable energy available in the district will increase to 100 MW by 2025 and 318 MW by 2030.

4	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
Direct Control						
4.1	We will investigate options for generating green energy for Council buildings	We will Commission expert advice to review the Council's estate and develop an action plan	April 2022	Options reported to Council after review completed		Head of Assets
Place shaping						
4.2	We will promote the use of renewable energy	Review the Local Plan and consider measures such as: Identifying areas suitable for renewable energy and produce guidance, Investigate options for community and district heat networks.	Review policies by September 2025	Revised local plan approved outlining approach to renewable energy		Head of Development Services

5 THE WAY WE LOOK AFTER OUR ENVIRONMENT

WHY IS THIS A PRIORITY?

Climate change can have a devastating impact on our natural environment, but restoring and improving nature can help us to reduce emissions.

Well-functioning, fertile soils maintain our food and timber supply. They store carbon and support a diverse range of organisms that form part of the terrestrial food chain for wildlife

UK peatlands are one of the most important terrestrial natural stores for carbon. They are estimated to store over 25 times the UK's total current annual emissions and store an order of magnitude higher than the carbon stored in trees. However, the area of land suitable for peat forming vegetation in the uplands could decline by between 50% and 65% by the 2050s

The abundance and distribution of UK terrestrial and freshwater species has declined by 13% since 1970. Upland areas face particularly acute risks, with 75% of present-day upland species potentially facing a decline in climate suitability by the end of the century under a medium level of warming

Particulate matter with an aerodynamic diameter of 2.5µm or less ($PM_{2.5}$) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases. The 2019 fraction of mortality attributable to $PM_{2.5}$ pollution in Staffordshire Moorlands is 4.8%, which is below the national average of 5.1%. There are two areas within Staffordshire Moorlands where air pollution exceeds that target values for the protection of human health. These are known as Air Quality Management Areas (AQMA) and the two areas are Leek town centre and Cellarhead crossroads.

The major contributors to NO_2 (Nitrogen Dioxide) in both AQMAs are Cars, Light Duty Vehicles and Heavy Duty Vehicles.

The percentage tree cover for the district is 14.35 with urban tree cover in Staffordshire Moorlands is estimated to be around 17-19%

WHAT ARE OUR TARGETS?

Mortality attributable to $PM_{2.5}$ pollution across the District will remain below the national average.

Annual mean nitrogen dioxide (NO_2) will be reduced by 25.5 µg/m³ In Leek and by 34.6 µg/m³ in Cellarhead by 2030

There will be 20% urban canopy cover by 2025 and 24% by 2030.

We will develop further targets when we prepare our biodiversity strategy.

5	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
Direct Control						
5.1	We will increase tree cover, and improve wildlife habitats and biodiversity	We have set out our approach in our SMDC Climate Change Plan				Head of Commissioned Services
Place shaping						
5.2	We will protect and enhance the existing green infrastructure resource within the district's towns and villages	We have set out our approach in our SMDC Climate Change Plan				Head of Communities and Climate Change
5.3	We will encourage action to conserve and improve biodiversity in the district	We will develop a Biodiversity Strategy that supports the Local Plan	March 2022	Strategy adopted by the Council		Head of Communities and Climate Change
5.4	We will encourage tree planting and create a framework for the planting of new trees	We will develop a Tree Strategy that supports the Local Plan	March 2022	Strategy adopted by the Council		Head of Communities and Climate Change
5.5	We will work in partnership to deliver our Air Quality Action Plan (AQAP)	Details are set out in our AQAP	On-going	Annual mean nitrogen dioxide (NO_2) will be reduced by 25.5 µg/m^3 in Leek and by 34.6 µg/m^3 in Cellarhead by 2030 Flood risk reduced		Head of Regulatory Services
Partnerships						
5.6	We will work with the County Council and others to reduce the risk of flooding in the district	We will support delivery of the Staffordshire Local Flood Risk Management Strategy	On-going			Head of Development Control

5	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
Involving, Engaging and Communicating						
5.7	We will deliver the tree planting schemes including the Community Orchards scheme	We will roll out the Community Orchard Scheme across the district	On-going	Number of orchards planted		Head of Communities and Climate Change
5.8	Work in partnership with our communities, including the most vulnerable to protect and improve the environment	We will work with Support Staffordshire and others to develop our approach	March 2022	Approach agreed		Head of Communities and Climate Change

6 THE WAY WE MANAGE WASTE

WHY IS THIS A PRIORITY?

Emissions from waste from the district totalled 12 $ktCO_2e$ in 2018. This includes Solid waste disposal emissions and wastewater emissions. According to DEFRA statistics for 2018/19, Staffordshire Moorlands saw a recycling rate of 56%, with an average of 396kg of collected waste per resident.

56% of household waste is reused, recycled, or composted in the district. The target for residual waste per household was 475kg in 2021/22.

WHAT ARE OUR TARGETS?

58% of waste will be reused, recycled or composted by 2025.

There will be 465 kg or less residual waste per household in 2021/22

There will be Net Zero emissions from waste by 2030.

6	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
Direct Control						
6.1	We will implement measures to reduce carbon emissions from the Council's waste and recycling service	We will continue to review the efficiency of existing waste collection rounds and make appropriate changes	On-going	Reduced mileage and therefore reduced emissions	The Government could require the Council to collect waste streams different which could increase the number of vehicles required to deliver these services. This could have a negative impact on mileage and increase emissions if we still use diesel vehicles.	Head of Commissioned Services
		We will encourage our community to recycle waste	On-going	Increased rate of recycling, reduction of residual waste collected per household	New direction by Government could lead to changes to services which frustrate residents but hopefully would lead to increased performance	Head of Commissioned Services
Partnerships						
6.2	We will work with Staffordshire County Council and other Staffordshire Councils to encourage recycling and the broader greener agenda	We will work with the Staffordshire Waste Partnership to develop and implement a joint Waste Management Strategy	On-going	Strategy developed and implemented	All local authorities are awaiting new Government direction on proposed changes to waste services as stated in the Resource and Waste Strategy (RAWS) 2018	Head of Commissioned Services

6	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
Involving, Engaging and Communicating						
6.3	We will encourage and support community initiatives designed to reduce, recycle and repurpose waste	We will support community initiatives where we can		Number of initiatives	Lack of community schemes either already in existence or a lack of new initatives	Head of Commissioned Services

7 THE WAY WE CAN HELP CHANGE TO OCCUR

WHY IS THIS A PRIORITY?

More than half of the emissions cuts needed rely on people and businesses taking up low-carbon solutions

WHAT ARE OUR TARGETS?

The District Council will become a Carbon Literate Organisation by 2020

All Town and Parish Councils will be supported to take action to tackle climate change

7	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
Direct Control						
7.1	We will ensure that climate change implications are considered in all Council decisions and key policies	We have set out our approach in our SMDC Climate Change Plan We will become a Carbon Literate Organisation by December 2022				Head of Democratic Services
7.2	We will ensure that our Councillors and Council staff have the training and skills required to contribute to the Council's carbon zero target.	We have set out our approach in our SMDC Climate Change Plan We will also work towards becoming a Carbon Literate Organisation by December 2022				Head of Democratic Services Head of Transformation
7.3	We will create a more inclusive society	We will collect information on the needs of frontline communities with respect to climate planning and/or implementation	December 2022	Needs analysis completed		Head of Communities and Climate Change
Showcasing						
7.4	Encourage and support community-led delivery of sustainability and biodiversity initiatives. In particular, we will encourage and support activity involving the most vulnerable members of our communities and those who will be most harmed by climate change.	We will work with Staffordshire Connects to help develop and support local sustainability groups	On-going	Number of community groups supported		Head of Communities and Climate Change
		We will support community projects, including through the Community Climate Change budget.	Budget available each financial year	Projects supported		Head of Communities and Climate Change

7	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
Partnerships						
7.5	We will work with Parish Councils to enable them to take local action to address Climate Change, including developing their own climate action plans.	We will provide support to Parish Councils through the Parish Assemblies	On-going	Climate Change features on Parish Council agendas Number of Parish action plans produced		Head of Democratic Services
Involving, Engaging & Communicating						
7.6	We will use our influence to make changes to local, regional and national legislation, policies and guidance where appropriate	We will respond to consultations, engage in relevant partnerships, and lobby for change	On-going	Number of consultations responded to		Executive Director (Place)
7.7	We will work in partnership with businesses and schools to improve air quality	Details are set out in our AQAP	On-going	Number of events and activities		Head of Regulatory Services
7.8	We will help the community to keep up to date with the latest ideas, advice and information about climate change We will make extra effort to reach groups such as vulnerable members of our community, high carbon emitting businesses, farmers and landowners.	We will produce a Communications & Engagement Strategy that includes a focus on climate education We will deliver a communications campaign	December 2021 On-going	We will publish our strategy on our website Number of campaigns delivered		Head of Transformation

7	What will we do?	How will we do it	When will we do it	How will we know it's working?	What else needs to happen? What could stop us from making it happen?	Who will make sure that it happens?
7.9	We will provide our communities with opportunities to take part in shaping and delivering climate change activity.	We will produce a Communications & Engagement Strategy We will deliver a series of engagement events	December 2021 On-going	We will provide details of the results of our engagement activities		Head of Transformation Head of Communities and Climate Change
7.10	Provide advice and support to residents, businesses and others	We will signpost people to appropriate sources of information via our website	Website updated by December 2021	We will monitor the number of people that visit our website		Head of Communities and Climate Change
7.11	Encourage utility companies to replace any trees that are removed to allow them to carry out maintenance work	The Council will ask utility companies to replace trees at their own cost	On-going	Number of trees replaced		Head of Assets

KEY TERMS (GLOSSARY)

ACTIVE TRAVEL

Walking, cycling, or using some other form of physical activity for all or part of a journey instead of using a car or other motorised transport.

You can find more information here

www.activetravel.org.uk

AIR QUALITY MANAGEMENT AREAS (AQMAS)

An area where air pollutant concentrations exceed / are likely to exceed national air quality objectives. AQMAs are declared for specific pollutants and objective.

You can find more information about the AQMAS in Staffordshire Moorlands here: AQMAs Declared by Staffordshire Moorlands District Council and general information about AQMAS here: DEFRA Air Quality Objectives

BIODIVERSITY

The variety of animal and plant life in any environment.

If you want to find out more, you may want to watch The Natural History Museum: What is biodiversity?.

You may also be interested to watch David Attenborough's - Extinction: The Facts

BLUE INFRASTRUCTURE

The network of rivers, canals, ponds, wetlands, floodplains, water treatment facilities, etc. Green infrastructure refers to trees, lawns, hedgerows, parks, fields, forest.

COMPENSATION

Storing or removing emissions rather than avoiding or reducing.

CARBON BUDGET

A simplified way to measure the additional emissions that can enter the atmosphere to stay below 1.5C (or any other temperature limit).

If you want to find out more, you may want to watch The Carbon Budget - what is it and why is it important?

CARBON CYCLE

The carbon cycle is the way carbon is stored and replaced on Earth. The main ways that carbon gets into the carbon cycle are volcanoes, and the burning of fossil fuels like coal and gas. The main way carbon gets taken out of the atmosphere is by photosynthesis by living organisms.

CARBON DIOXIDE EQUIVALENT (CO_2E)

Different greenhouse gases, such as methane, nitrogen oxides, etc., have different impacts on the greenhouse gas effect. The gaseous emissions from greenhouse gases can be converted to the amount of CO_2 needed to create the same effect. This is called the Carbon Dioxide equivalent (CO_2 e) and allows reporting of a single figures for emissions.

CARBON FOOTPRINT

A carbon footprint is the total amount of greenhouse gases (including carbon dioxide and methane) that are generated by our actions

You can calculate your own footprint here:

https://footprint.wwf.org.uk/

CARBON LITERACY

Being aware of the impact of everyday activities on the climate, and knowing what steps can be taken to reduce emissions as an individual, a community group, or an organisation, and why it's important that we all take these steps.

You can find more information here

https://carbonliteracy.com/

CARBON MANAGEMENT HIERARCHY

Some actions are better than others at producing more lasting reductions in emissions. Avoiding emissions in the first place needs to be prioritised over actions that remove or offset omissions.

CARBON NEUTRAL

Carbon neutral means that the amount of carbon that is emitted (released) is the same as that absorbed from the atmosphere. To achieve net zero emissions, all worldwide greenhouse gas (GHG) emissions will have to be counterbalanced by carbon sequestration.

CARBON SINK

Any system that absorbs more carbon than it emits. The main natural carbon sinks are soil, forests and oceans.

CIRCULAR ECONOMY

A model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. This is in contrast to the traditional, linear economic model, which is based on a take-make-consume-throw away pattern.

A circular economy is based on three principles:

- Design out waste and pollution.
- Keep products and materials in use.
- Regenerate natural systems – favouring the use of renewable resources and enhancing natural systems by returning valuable nutrients to the soil.

If you want to find out more, you may want to watch The Ellen McArthur Foundation's Humans Changed the Face of the Earth, Now We Rethink Our Future

CLEAN ENERGY

Energy that creates little or no greenhouse gases and that does not pollute the atmosphere energy when used.

CLIMATE CHANGE

Climate change is the changes in global weather patterns that are driven by global warming. If you want to know more, then you may want to watch David Attenborough's Climate Change - The Facts.

CLIMATE CO-BENEFITS

Positive outcomes from action that are not directly related to climate change mitigation. Such co-benefits include cleaner air, green job creation, public health benefits from active travel, and biodiversity improvement through expansion of green space.

CLIMATE ENVELOPE

The climate where a species currently lives.

COMMUNITY ORCHARDS

Community orchards are places for people to come together to plant and cultivate local and unusual varieties of fruit, and sometimes nut, trees often planted among grass full of wildflowers.

DOUGHNUT ECONOMY

An economic theory developed by University of Oxford economist Professor Kate Raworth that suggests that a thriving human existence is only possible by considered use of available resources. The theory suggests that we risk catastrophic effects that are harmful to human life if we use too much of the available resources and that using earth's resources unwisely can also lead to a shortfall, with humans existing in danger and hardship.

If you want to find out more, you may want to watch Kate Raworth explain Doughnut Economics.

ECO-SCHOOLS

A programme that allows young people to introduce and lead environmental actions and education in their school.

You can find more information here: Eco Schools

EEMS

Energy Efficiency Measures

ELECTRIC VEHICLES (EV)

Electric vehicles are powered by electric motors. They get some or all their power from large, rechargeable batteries. Different categories include:

All-electric EVs, where the battery is the only power source.

Plug-in Hybrids (PHEVs), which can switch between running on electricity or fossil fuels.

Hybrids (HEVs) which do not plug in and have a much smaller battery which is recharged while driving.

Fuel Cell Vehicles that generate their own electricity on-board from a fuel such as hydrogen.

EV CHARGING

There are three main types of charger:

Slow Typically rated up to 3kW with a charge time of 8-10 hours

Fast Typically rated at either 7kW or 22kW with a charge time of 3-4 hours

Rapid Typically rated from 43kW with a charge time of 30-60 mins (only compatible with EVs with a rapid charging capability)

The choice of connectors depends on the charger type (socket) and the vehicle's inlet port. On the charger-side, rapid chargers use CHAdeMO, CCS (Combined Charging Standard) or Type 2 connectors. Fast and slow units usually use Type 2, Type 1, Commando, or 3-pin plug outlets. On the vehicle-side, European EV models (Audi, BMW, Renault, Mercedes, VW and Volvo) tend to have Type 2 inlets and the corresponding CCS rapid standard, while Asian manufacturers (Nissan and Mitsubishi) prefer a Type 1 and CHAdeMO inlet combination.

EMISSIONS

Emissions are things (in this cases gases) that are given off or released into the air from things like factories and cars.

For our purposes, it is the release of the seven greenhouse gases specified in the Kyoto Protocol.

ENERGY EFFICIENCY

Using less energy to do the same thing, such as heat a home. This can lower fuel consumption, reduce emissions and help tackle climate change. Measures to improve energy efficiency within buildings can include the installation of loft or cavity wall insulation (improving the energy efficiency of the building) or installing new appliances that are more energy-efficient (such as new heating systems).

EPC RATING
ENERGY PERFORMANCE CERTICATE (EPC)

This shows how much a building will cost to heat and light, what its carbon dioxide emissions are likely to be and what improvements can be made to improve its energy efficiency. An EPC rates a property in bands from A (most efficient) to G (least efficient) and is valid for 10 years from the date it's issued.

FOSSIL FUELS

A fuel (oil, coal or gas) that was formed from the remains of living organisms millions of years ago. Fossil fuels are non-renewable energy resources which are harmful for the environment because they release carbon dioxide, and other greenhouse gases and harmful air-polluting gases, when they burn.

GLOBAL WARMING

Global warming is the term used to describe the rising of the average temperature on Earth. It has to do with the overall climate of the Earth rather than the weather on any given day.

GREEN ENERGY

Energy from natural sources, such as the sun and wind.

GREEN INFRASTRUCTURE

The network of green spaces including green roofs, living walls, parks, nature reserves, backyards and gardens, waterways and wetlands, streets and transport corridors, pathways and green corridors, squares and village greens, sports fields and cemeteries.

The National Planning Policy Framework defines Green infrastructure as: "A network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities".

The term is often used to also include 'blue infrastructure.'

GREEN INFRASTRUCTURE PLANNING

Providing networks designed to link existing (and proposed) green spaces with green corridors running through towns, villages and rural areas.

GREEN JOBS

Jobs that have a direct, positive impact on the planet such as renewable energy, electric transport, energy efficiency or nature conservation.

GREEN SPACE

All natural and semi-natural areas where vegetation such as trees, lawns, hedgerows, parks, fields, woods and forests grow (or could grow).

GREENHOUSE EFFECT

The greenhouse effect is the rise in temperature that the Earth experiences because greenhouse gases trap energy from the sun.

GREENHOUSE GASES

Greenhouse gases are gases in Earth's atmosphere that trap heat. They let sunlight pass through the atmosphere, but they prevent the heat that the sunlight brings from leaving the atmosphere.

The Kyoto Protocol identifies seven greenhouse gases: Carbon dioxide (CO_2), Methane (CH4), Nitrous oxide (N2O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride (SF6) and Nitrogen trifluoride (NF3).

If you want to find out more, you may want to watch The Royal Society's The Basics of Climate Change

HABITATS

A habitat is a place where an animal lives and provides it with food, water and shelter. There are many different sorts of habitats around the world polar regions, to forests, grasslands and deserts.

LOCAL PLAN

Local Plans are prepared by Local Planning Authorities and provide a local guide to what can be built where and shape how land use and places will change and develop in the future. Planning applications need to be in line with Local Plans otherwise they are unlikely to receive planning permission.

MASTER PLAN

A master plan is a long-term planning document that provides an ideal, imagined layout to guide land use and development.

MINIMUM ENERGY EFFICIENCY STANDARDS (MEES)

The Domestic Minimum Energy Efficiency Standard (MEES) Regulations set a minimum energy efficiency level for domestic private rented properties.

OFFSET

A carbon offset is a reduction in emissions of carbon dioxide or other greenhouse gases made to compensate for emissions made elsewhere. This includes things like land restoration or the planting of trees.

PAS 2030 STANDARD

Publicly Available Specification (PAS) 2030 is a British Standards Institute (BSI) that sets out the requirements for commissioning, installation and handing over of Energy Efficiency Measures in existing buildings.

PAS 2035 STANDARD

Publicly Available Specification (PAS) 2035 is a British Standards Institute (BSI) standard that applies to existing buildings and provides a procedure for building assessment, a guide to selecting the most appropriate energy efficiency measures and instructions for long-term monitoring. It also sets out the minimum standards of qualifications, roles and responsibilities, for anyone carrying out retrofitting

PROCUREMENT

The process by which goods or services are obtained, usually for business purposes.

RENEWABLE ENERGY

Energy from recyclable sources. most green energy sources are also renewable, not all renewable energy sources are considered entirely green.

REPURPOSING

Adapting or finding a new use for something instead of throwing it away once it has been used.

RETROFITTING

Modifying existing buildings, vehicles or equipment to make them more energy efficient and reduce emissions.

SCOPE 1/2/3 EMISSIONS

Scope 1: direct emissions from owned or controlled sources.

Scope 2: indirect emissions from the generation of purchased electricity, steam, heating and cooling consumed by the organisation.

Scope 3 includes all other indirect emissions that occur in an organisation's value chain.

SEQUESTRATION

Removing carbon oxide from the atmosphere and then storing it is known as carbon sequestration.

SUSTAINABLE DEVELOPMENT

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs

SUSTAINABLE TRAVEL

Travelling in a way that minimises our negative impact on the planet.

UPCYCLING

Reusing objects or material that has been thrown away to create a product of higher quality or value than the original.

WHAT CAN I DO?

You can eliminate waste, reduce your carbon footprint and start making an impact right away by committing to some or all of the following actions. This isn't a list of everything that you can do but we hope it gives you some ideas.

FOOD

- Set a goal of reducing the food waste in your home from its current levels.
- Commit to only buying what you need and eat what you buy.
- Avoid air-freighted food when they are out of season.
- Buy local food and support the local economy.
- Don't leave the house without a reusable cup.

ELECTRICITY

- Take basic steps that cost nothing: turn lights off, hang washing out to dry, wash at a lower temperature and keep showers short.
- Wear a jumper rather than turn the heat up, turn the thermostat down and turn radiators off in empty rooms (if you can without risking your health).
- Seek help if you are struggling to keep warm
- If you can afford to invest in your home, prioritise the carbon cutting measures that have the biggest impact: insulation (starting with drafts, then the loft, windows and walls), smart heating (efficient boilers, remote controls that include radiators), and lastly considering solar panels or heat pumps.
- Consider options for buying electricity from a green energy provider if they can demonstrate that your bill goes entirely towards additional renewable power.

TRANSPORTATION

- Aim to fly less and support your local economy through staycations
- Cut car emissions by walking, cycling, using public transport, car sharing or working from home.
- Consider buying an electric or plug-in hybrid if you can and only if you need a new car.

PURCHASES

- Consume less
- Consume wisely. Consider the supply chain and think about the carbon footprint, fair livelihoods and all other sustainability criteria.
- Buy local.
- Buy high quality things where you can and make them last, buy things that are designed to be repairable and sell on or give away when you have finished with them.
- Choose the most energy-efficient white goods.

INVESTMENTS

- Use any money you have to help create the future you want to see.
- Look at options for investing in pension and saving schemes that don't support fossil fuel companies and prioritise those that invest in the things we urgently need, such as renewables and reforestation.

"Very few of us are squeaky clean in carbon terms. You don't have to become so overnight but most of us do need to make serious changes over the next few years. It's important to keep moving in the right direction and enjoy the process of cutting carbon out of our lives. Don't beat yourself up, but don't let yourself off the hook either."

Professor Mike Berners-Lee, Lancaster University

DO ALL YOU CAN

- Put a plan in place and work your way through it.

Adopt the 5 R's

- Refuse – say no to the stuff that you don't need and that becomes instant waste
- Reduce – what do you actually need, how much do you need, how long it will last?
- Reuse – can you reuse or repair it before throwing stuff away?
- Recycle – aim for products that can be recycled and then put them in the correct bin
- Rot – how about composting?

THE FINAL WORD

"We are at a unique stage in our history. Never before have we had such an awareness of what we are doing to the planet, and never before have we had the power to do something about that. Surely we all have a responsibility to care for our Blue Planet. The future of humanity and indeed, all life on earth, now depends on us."

David Attenborough, "Our Blue Planet"

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