



Essex County Council

Environment and Climate Action

# Essex Climate Action Annual Report

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2021-22





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# Foreword

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**I am very pleased to see our first Climate Action update published, a real milestone for us in tackling the climate emergency here in Essex. We will be producing this report annually to track our ongoing progress.**

In 2020, Essex County Council (ECC) set up the Essex Climate Action Commission and in July 2021, the Commission published its report, [\*\*Net Zero: Making Essex Carbon Neutral\*\*](#). This sets out around 100 recommendations which tackle the climate and biodiversity challenges head on. The Commission recognised that nature is key to absorbing and storing carbon and is our best defence against risks from already changing weather systems. These risks, which are increasing year on year, bring more flooding, subsidence, soil degradation and as our recent summer underlines, water scarcity and overheating.

ECC welcomed the report and has reflected these priorities, and the urgent need for action, in the Everyone's Essex strategy and [\*\*our four year, £200m climate action plan\*\*](#), published in November 2021.

The past year has given us many challenges, including the consequences of the COVID-19 pandemic and the cost of living crisis. Despite this, from July 2021 to July 2022 (the period which this report covers), we have worked hard across the county to level up our communities and shared spaces in pursuit of a better environment for all. The recent energy crisis has underlined the need to move to local renewable energy, and as we all consider the impact of rising fuel bills, it is clear we need to tackle energy efficiency in our homes and businesses. The action to tackle climate change will also give us cheaper energy and warm comfortable homes. As we look to the future, it will give us a green economy and help us to secure long term, good quality jobs.

Of course, ECC is only one organisation, and our district, borough, city, town and parish councils; our colleagues in the NHS and local universities; our fantastic local businesses and of course our residents are all stepping up to play their part in building a cleaner, low carbon future for Essex. As this report shows, we have the ability and the determination to work together to reach demanding goals, but we recognise that such initiatives are only the start and there is much more work to do.

I trust you will be as delighted as I am at the fantastic progress we have made set out in this report and be inspired to continue to work together to build a better future for us all.



**Cllr Peter Schwier, Climate Czar and Deputy Cabinet Member to the Leader**

# A key year for Climate Action in the UK

Since the Essex Climate Action Commission published its '[Net Zero: Making Essex Carbon Neutral](#)' report and recommendations in July 2021, there have been a number of national and international climate events and initiatives. These have provided opportunities for Essex to develop new ideas, understanding and momentum across a range of areas, as well as to seek out new partners and examples of best practice to embed across the county. Internationally, COP 26 – the UN's Climate Change Conference – was hosted in Glasgow in 2021, bringing together politicians, experts and citizens from across the globe. Key outcomes included the signing of the [Glasgow Climate Pact and agreement of the Paris Rulebook](#), alongside a host of other announcements made at – and around – the conference.

The latest scientific evidence of the causes, impacts and options to address the climate emergency were published in the [Sixth Assessment Report of the United Nation's Intergovernmental Panel on Climate Change](#). This underscores how urgently action must be taken.

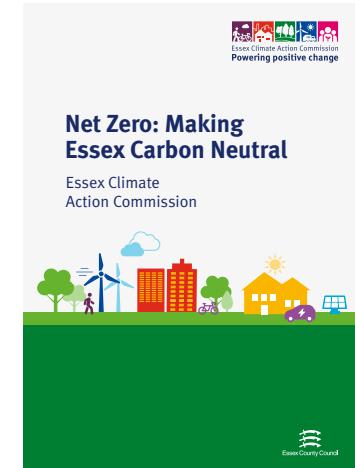
In the UK, the Government published its [Net Zero Strategy: Build Back Greener](#) and made a commitment in the UK's Sixth Carbon Budget to set in law a climate change target to [cut emissions by 78% by 2035](#) compared to 1990 levels.

The Climate Change Committee's '[Progress in reducing emissions: 2022 Report to Parliament](#)' highlighted the importance of continued and sustained action to tackle climate change at a national level. There has also been publication of climate change strategies for specific areas and government departments, including the Department for Education's '[Sustainability and Climate Change Strategy](#)', which outlines plans and priorities for English schools, ranging from the curriculum to management of school buildings. All of these national strategies will inform how we tackle climate change in Essex.

Closer to home, Essex County Council (ECC) fully endorsed the Essex Climate Action Commission's report and recommendations in November 2021, including a commitment that Essex as a county will be net zero by 2050. The endorsement is supported by a £200m four-year action plan. The [Essex Climate Action Commission](#) was set up to advise Essex County Council about tackling climate change. It was launched in May 2020 for an initial term of two years and has since been extended for a further three years. The commission will run until 2025.

The latest science underlines that concerted action and ambitious change are urgently needed. Our own experience over the past year: the hottest summer on record, wildfires destroying homes in Essex, water shortages with hosepipe bans into the winter and increased flooding underlines how urgent this action is for us here in Essex.

**The Essex Climate Action Commission's recommendations serve as an important guide to how we can tackle climate change in the county, and underline how important it is that our public sector, communities, businesses and all partners work together to achieve our ambitions. We are delighted to set out the progress we are already making in this report.**





## 1. Land Use & Green Infrastructure

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Greening our landscape is the best protection against increasing risks of flooding, water scarcity, overheating and soil degradation. This means setting aside land for woodland, meadows and salt marsh in our rural areas and making space for trees, sustainable drainage and pocket parks in our towns and villages. This green infrastructure helps the land to act as a sponge, absorbing heavy rainfall when it arrives. The land can store the water rather than it running off into pipes, carrying soil away, blocking pipes and causing sewage overflows. This green space also absorbs carbon and gives a home to wildlife, cuts air pollution and provides all of us with green space so critical for our physical and mental health ([Forest Research](#)).

The COVID-19 pandemic underlined to us all how important our green spaces are, yet in 2021 only 29 per cent of our population was within a five-minute walk of a publicly accessible green space ([Natural England](#)). Essex has one of the lowest areas of land given over to trees in the UK ([Essex Green Infrastructure Strategy 2020](#)). Over the last century – primarily due to intensification of agriculture and growth of our towns and villages – many natural habitats (such as meadows) and the wildlife they contain have disappeared in Essex. More than 60 per cent of Essex is farmland, and agriculture currently generates approximately 11 per cent of UK greenhouse gas (GHG) emissions ([ONS data](#)). To secure food production long term we need to move to sustainable farming practices: this is needed to both to cut our carbon emissions but also to protect our precious soils ([State of the environment: soil report](#), [Agricultural Transition Plan 2021 to 2024](#)). The Essex Climate Action Commission recommended that Essex double the amount of natural green infrastructure across the county.

## Essex Forest Partnership

The Essex Forest Partnership (EFP) comprises the 12 districts, boroughs and cities in Essex. It was set up by Essex County Council's Essex Forest Initiative to share and coordinate tree planting targets across the county.

Essex County Council (ECC) has committed funding to 2025 for the Essex Forest Initiative with a target of planting at least 375,000 trees and is well on track, having planted 142,000 trees in the first two years to date. However, this is only part of a concerted effort across the county.

The partnership is working with private landowners, farmers, local borough, district and parish councils, schools, businesses, conservation charities and regulatory bodies such as the Environment Agency, Forestry Commission and Natural England, and aims to deliver tree planting at both large and small scales to benefit people, nature and the climate. The EFP has regular meetings to share knowledge on tree planting achievements, barriers and to collaborate on tree planting projects.

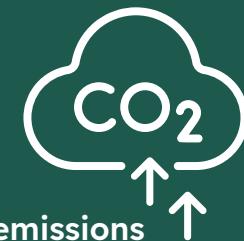
In September the Essex Forest Initiative successfully bid for £805,000 from the Local Authority Treescape Scheme and the Urban Tree Challenge to share with numerous authorities across the EFP. Together, the EFP has committed to plant over one million trees, increase and improve green spaces in Essex, and scale up urban tree planting to absorb heat and pollution while benefiting local communities.

There are a wide range of benefits to planting trees on this scale. Most relevant to climate change is the fact that over the course of their lifetimes the trees will sequester huge amounts of carbon dioxide, thus reducing the amount that sits in the atmosphere and contributes to climate change. The larger the trees grow, the more carbon they will store, but it may take anywhere between 10-50 years for them to reach their peak carbon absorption. The trees will also create and connect habitats for wildlife, reduce surface water flooding in both urban and rural areas and reduce air pollution for Essex residents.



**More than  
60%  
of Essex is  
farmland**

**Agriculture  
currently  
generates  
11%  
of UK GHG emissions**



**Funded until 2025,  
the EFI has a target  
to plant at least  
375,000 trees**



## Investing in Nature to Reduce Flood Risk & Protect Homes

Essex County Council (ECC) is the statutory flood authority for Essex. Each year ECC invests in flood protection via its capital flood programme, which utilises nature-based solutions for the vast majority of projects. ECC aims to raise 50 per cent of the funding for these projects from external sources, mainly from Environment Agency grants.

Between July 2021 - July 2022, ECC has completed eight schemes, helping to protect 136 residential homes in Essex. This amounts to an approximate total capital spend of £3,000,000. Another five schemes are programmed for delivery this year.

An innovative scheme being developed this year is in West Mersea, protecting a minimum of eight properties from coastal and surface water flooding. A large tidal surge occurred in December 2013 flooding around ten properties in the area, and at least six incidents or near misses have been recorded since then, causing significant damage to property and disruption to the community. The flood alleviation scheme involves the installation of a flood defence barrier and infrastructure that will be deployed across The Lane at times when there is an Environment Agency flood warning in place. Once constructed, the scheme will be handed over to a group of resident volunteers to operate, which is a unique feature of the scheme and potentially one of the first examples of such an approach in the UK.

### Case Study: Ursuline School Brentwood

This scheme was designed to reduce the risk of surface water flooding to residential properties downstream of the school by reducing the height of the existing outfall from the pond by 500mm. By doing this we have created additional storage that can be utilised in periods of heavy rainfall.

In addition to flood risk reduction, the scheme has introduced bird/bat boxes and removed dead and over hanging trees to enhance the environmental benefits. Access for students and maintenance has also been improved by the work ECC has completed.

Alongside large-scale projects, ECC is supporting installation of sustainable drainage where planting and natural landscaping enable the landscape to absorb water and so reduce flood risk. Park Avenue, Canvey is the first road in Essex to have new “rain gardens” installed to help reduce the risk of local flooding, through the Make Rain Happy project, funded by ECC and Anglian Water. A new Sustainable Drainage (SuDS) project, funded by the Department for Transport and ECC will provide SuDS planters, tree pits, rain gardens, filter drains, swales, and ditches for eight Basildon schools. The schools were identified as they are all within ECC’s Critical Drainage Area and are also part of the Department for Education’s high priority list.



Road in Park Avenue, Canvey



Roadside SuDS feature on Canvey Island



ECC has also been providing advice on Sustainable Drainage Systems (SuDS) for new developments since 2011. On average we provide SuDS advice on 850 major planning applications each year which results in 62,500 new properties receiving flood reduction expertise.



**SuDS advice  
provided on  
850 major planning  
applications a year**



**62,500  
new properties  
receiving flood  
reduction expertise**



**SuDS Garden in Basildon Hospital created as  
part of the ECC and EU Sponge 2020 Project**

## Climate Focus Area

One of the Essex Climate Action Commission's recommendations was to create a Climate Focus Area for the Blackwater and River Colne catchment area. The idea behind this is to have a designated area where we can take accelerated action to reduce greenhouse gas emissions, generating insight and understanding that can be used across the county.

It is vital for communities to support ambitious action and a series of stakeholder workshops were established and run by Professor Peter Hobson from Writtle University College, working with Essex County Council (ECC). These workshops brought together representatives from parish councils, community groups, landowners, local authorities and government agencies to develop ideas for targeted action to improve natural green infrastructure in the Climate Focus Area. A total of 57 individuals from around 40 organisations attended the workshops. This amazing group developed 38 project ideas and committed to working with their local communities to deliver these over the next year.

Writtle University College will host an online platform – to be launched in November – to share information, in order to enable collaboration between these groups and help others learn from their experience.



Attendees at the Climate Focus Area stakeholder workshops

## Natural Environment Investment Readiness Fund

Essex County Council (ECC) has secured a grant of £98,495 from the Department for Environment, Food & Rural Affairs' (DEFRA) Natural Environment Investment Readiness Fund to develop a business case to unlock private and public investment in green infrastructure in Essex. A strong consortium of partners is exploring how landowners can make space for nature, while still getting enough income to be commercially viable. This includes looking at new funding sources such as woodland carbon units and developer payments to compensate for loss of biodiversity from new housing developments (biodiversity net gain), which can help landowners restore critical woodland and meadows. There are four very distinct sites in this ground-breaking pilot programme and the aim is that investment cases can be used as a blueprint for developing many more similar projects across Essex.

## The Local Nature Partnership and Local Nature Recovery Strategy

The Essex Local Nature Partnership, launched in March 2022, brings together conservationists, government agencies, businesses, communities, and individuals to protect, improve, create and connect our county's wildlife.

The 2021 Environment Act requires every region to prepare a [Nature Recovery Strategy](#), in line with Government's [25 year environment plan](#), by 2023. The Local Nature Recovery Strategy will be delivered by Essex County Council (ECC) on behalf of Greater Essex including the unitary authorities of Southend and Thurrock. ECC is working with the Partnership to develop and deliver this ambition. The new Nature Recovery Strategy will map the most valuable existing green spaces for nature and develop proposals for connecting these together by creating or improving habitats for wider environmental goals.

The [Local Nature Partnership](#), hosted by ECC and chaired by Dr Simon Lyster, works across Essex to deliver four targets by 2030: 50 per cent of farms to be sustainably managed; access to high quality green space for all; an increase in the total area of Essex dedicated to natural green infrastructure from 14 to 25 per cent; and one in four people in Essex taking action for nature recovery. The Partnership is preparing a baseline analysis to enable measurement of progress against these targets which will be delivered by the Partnership's four working groups, which are focused on: the Local Nature Recovery Strategy; community engagement; biodiversity net gain; and agriculture.

Immediate practical actions include supporting the newly formed Farm Cluster in the Blackwater catchment area of Essex; and working with local planning authorities to produce guidance around new requirements in the Environment Act for developers to protect or re-create nature environments for wildlife (Biodiversity Net Gain).



Essex Local Nature Partnership launched in March 2022



### 4 targets:

1. Sustainable farmland
2. Access to nature for all
3. Increasing coverage of natural green infrastructure
4. Acting for nature recovery



## Essex Water Strategy

The Emerging [Water Resources Regional Plan](#) for Eastern England, (Water Resources East, January 2022) shows how growth, energy, food, agriculture, and public water supplies are undermined by water insecurity and underlines that we are facing a regional water crisis, with Essex one of the counties most affected. It is clear that we need to take action to protect this critical resource. Reducing our water use also cuts carbon as it requires a lot of energy to purify water.

Water Resources East (WRE) is working with stakeholders across the East of England to ensure that we have a framework for securing water supply out to 2050. We also need to improve water quality and protect our local wildlife in our rivers and seas. The Essex Water Strategy project will look more closely at these challenges and consider what actions we need to take locally. The aim of this work is to ensure that there is a good understanding of the impact of water scarcity on Essex's communities, businesses and council services.

It is the role of water supply companies to fully assess the viability of long-term strategic water supply solutions, such as new reservoirs, piped water transfers or desalination technologies, but there are many smaller scale interventions which make a big cumulative impact. Using less water in our homes and installing smart meters to identify leaks, ensuring that new developments are water efficient, and delivering nature-based solutions to hold back water within the environment all help. The Essex Water Strategy will aim to integrate the work of all our stakeholders and showcase the art of the possible with innovative technologies and collaborative partnership working.



## 2. Energy

Energy provides heat and electricity for our homes, places of work and powers our transport. However, a long-standing reliance on fossil fuels (e.g. coal, gas and oil) means that in 2020 energy generation was responsible for 21 per cent of the UK's greenhouse gas emissions ([ONS](#)).

Reaching net zero carbon emissions by 2050 will require a huge change in the way that our energy is produced and distributed, including much more localised energy generation, and far greater focus on energy efficiency, so we are not wasting our energy and our money. The Essex Climate Action Commission recommended a substantial increase in renewable energy generation capacity, to provide power and heat to homes, places of work and for electric vehicles.

### Case Study: Fairfields Farm

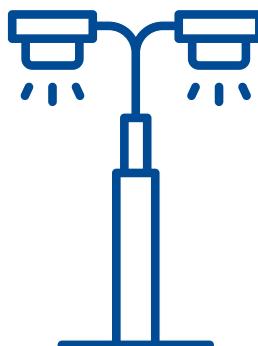
Family-owned Fairfields Farm grows and harvests potatoes, which are either packed and shipped or hand-cooked at the on-site factory to become artisan crisps sold across the region.

The farm has begun a proactive journey towards net zero. Alongside using solar photovoltaic (PV) technology to power the cold stores where potatoes are kept, the farm recently embarked on an ambitious anaerobic digestion plant project. The plant generates methane gas, which is supplied to the gas grid as renewable energy and also provides fertiliser to the farm's potato crops as a natural by-product.

Essex continues to be a focus for off-shore wind and there have been consultations this year on further off-shore investments ([Five Estuaries](#)). We are also seeing more investments in solar farms in Essex. Essex County Council (ECC) collaborated with Essex Local Planning Authorities to produce [Guiding Principles for Solar Farms](#) which sets out how solar farms can, if delivered thoughtfully, support agriculture, wildlife and create new public green space, as well as supplying clean electricity.

Supporting the transition to low carbon energy, organisations across Essex are increasingly committing to using a renewable energy supply. For example, [University of Essex](#) and ECC both contract electricity supplies from 100 per cent renewable energy suppliers. Anglia Ruskin University is committed to purchasing all electricity ‘from zero carbon sources where this purchase leads to a real increase in investment into those sources’ by 2026, and Anglian Water aims to procure grid electricity through green tariffs and other renewable sources by 2030.

We are also seeing a significant increase in solar panels on buildings across the county. For example, ECC now has over 45 solar installations across its estate and has just reached 1,200,000 kilowatt hours (kWh) of energy generated. The [Princess Alexandra Hospital](#) in Harlow, Essex now has what is believed to be the largest array of solar panels currently in the NHS.



ECC also remains conscious of using energy efficient streetlighting, with

**36,681 LED streetlamps**

now installed across the county.



Solar Farm, Birch, Colchester

## Community Power

It is not just large organisations who can make a difference here. Community energy draws on local skills and people power to create community-based solutions to the climate crisis.

Over the past two years, Essex County Council (ECC) and Community Energy South have mentored four community energy groups via the Pathways programme: [Community Energy Colchester](#), [Sustainable Danbury](#), [Tollesbury Climate Partnership](#) and [Saffron Walden Community Energy](#). These non-profit organisations are owned and managed by local people working in their own communities.

The groups are now delivering their own projects including: installation of electric vehicle charge points; an electric cargo bike scheme for more eco-friendly local delivery services; securing funding to support decarbonising their local school; and developing a share offer to facilitate community-owned renewables.

All these groups are offering energy and fuel poverty advice and have so far supported 85 individuals, with a £3,451 total financial benefit. By April 2023, 100 individuals will receive in-depth energy support to reduce energy consumption and costs.

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The Essex model for supporting community energy groups convinced the Department for Business, Energy and Industrial Strategy to appoint Community Energy South to undertake a national rollout of the Pathways programme. This will help other local authorities unlock the potential of community energy groups and achieve their net zero ambitions.

## Case Study: Littlebury - Planning for Decarbonisation

One of the first whole village decarbonisation plans in England is the CommuniPower project being developed in Littlebury. CommuniPower is a partnership between ECC, the people of Littlebury, the local Community Energy group Saffron Walden Community Energy CIC, UK Power Networks and additional third-party engineering expertise. Combining real energy-use data with a desire from the people of Littlebury to become part of the solution to the climate emergency, CommuniPower aims to find the optimal solution to switch to low-carbon power and heating. The project aims to help the community to take real ownership of their energy, develop greater resilience and provide the model for other rural communities to become sustainable in a way that is achievable and affordable for all.

The village of Littlebury has produced an initial Community Energy Plan to prepare them for CommuniPower. Next steps for the Littlebury Energy Project include individual zero carbon initiatives and projects for some groups of properties. The village is working with partners to seek industry funding to become a leading pilot for CommuniHeat, developing and implementing a detailed energy transition plan for the whole community, and one that could be replicated for other villages in Clacton and Tollesbury.



## South East New Energy – accelerating the uptake of solar and storage

South East New Energy is an innovative partnership between Essex County Council (ECC), the University of East London, Power Circle, Community Works CIC and other partners, to support parish councils and community groups to develop community-owned renewable energy generation and storage.

The aim is to set up a social enterprise – a not for profit company – to roll out “smart local energy systems” consisting of solar and battery storage. This helps to support a just transition to net zero carbon by providing the local community with fair access to local renewables. The social enterprise will identify projects on behalf of households and organisations, and then support them to finance, install and operate these.

ECC has engaged experts to provide support. The first step is a free geospatial analysis of the local areas, including both land parcels and rooftops, to assess the potential for energy generation from solar panels. If this analysis discovers useful opportunities, a full feasibility study is undertaken. This approach helps create an investable model with real-world commercial potential.

In addition, by addressing energy generation across a local community, instead of property by property, it opens up options for **all** members of that community to benefit. ECC is seeing a wide range of potential projects coming forward that are led by the local community, from a small solar farm on charity owned land, to rooftop solar schemes that aim to cover whole industrial estates and benefit neighbouring local residential developments.



## Solar for Residents

Essex County Council (ECC) was one of a number of councils to pioneer the use of a collective purchasing approach to increase domestic rooftop solar in the county back in 2018. Since 2021, purchase options have included battery storage. This approach, called Solar Together, accelerates progress towards sustainable housing and energy by supporting communities, especially households, to generate their own renewable energy.



### Key Facts

Since 2018, Solar Together Essex campaigns have resulted in **770 solar photovoltaic (PV) installations** in Essex households and circa **3.15MW of solar energy generation capacity** in our domestic rooftops. The current scheme launched in February 2022 is expected to result in over **610 new solar installations** adding **another 2.4MW of solar generation capacity** to Essex. Taken together, the solar PV installations from our three campaigns so far will **displace over 1,200 tonnes of CO<sub>2</sub>** equivalent emissions annually.

More than ten councils across the UK now use this approach to drive solar PV adoption in their local areas. We are exploring running further Solar Together schemes in 2023 and beyond.

### Case Study: Solar Together

Essex residents have saved between **20 to 37 per cent** on market rates for solar panels through purchasing their systems as part of Solar Together Essex and satisfaction with the scheme has been very high.

**“** Our installation was painless; I was delighted that even on a dull day electricity was produced and our electricity bill **reduced by two thirds** in the first month. I would highly recommend Solar Together! **”**

**Hannah, Chelmsford - 10 panels and battery storage installed**

# 3. Built Environment

## Improving Our Existing Buildings

In 2020, 16 per cent of UK greenhouse gases were generated by homes and a further 18 per cent by businesses (ONS data). The greenhouse gases emitted from buildings are mainly the result of burning fossil fuels – gas and oil – for heating. We need to heat our homes and businesses differently.

### Heat Pumps

The Government is providing grants to encourage property owners to install low carbon heating systems such as heat pumps ([Boiler Upgrade Scheme \(BUS\)](#)). Alongside this, businesses in Essex are leading the transition to low carbon heating.

CB Heating in Clacton has entered into a [partnership with EDF Energy](#) to expand the offering of heat pumps in Essex, helping to tackle climate change. EDF is Britain's [biggest generator of zero-carbon electricity](#), and the partnership with CB Heating will mean more people in Essex can benefit from heating their home sustainably.

Heat pumps use thermal energy from the air, ground or a local water source and convert this energy to generate heating and hot water for your home. This is significantly more efficient and carbon friendly than a traditional boiler that uses oil or liquid petroleum gas.

EDF's investment into CB Heating supports the [Heat Pump Installer Network \(HPIN\)](#) Training Academy – a dedicated training facility which opened in Clacton in August 2022.

The HPIN Academy aims to train up to 4,000 heat pump installers annually. This is a significant investment in green skills as the Microgeneration Certification Scheme (MCS) estimates that there are fewer than 5,000 qualified heat pump installers in the UK currently.

Around **80%** of energy used within the home is on heating and hot water so the boiler in our homes is one of the **single biggest contributors to personal carbon emissions.**



## Energy Efficiency

Within Essex in 2021 we have over 600,000 homes, 85 per cent of which were built before the introduction of standards for energy and insulation performance. Energy Performance Certificates (EPCs) show how energy efficient our homes are and whether they are in need of improvements (below C). The most efficient home is A+ and is relatively cheap to heat. The average in Essex, however, is D and very expensive to heat. This means most residents are paying more for their heating than is necessary and creating more greenhouse gas emissions.

To cut our greenhouse gas emissions and our energy bills, we all need to improve the energy efficiency of our homes and other buildings.

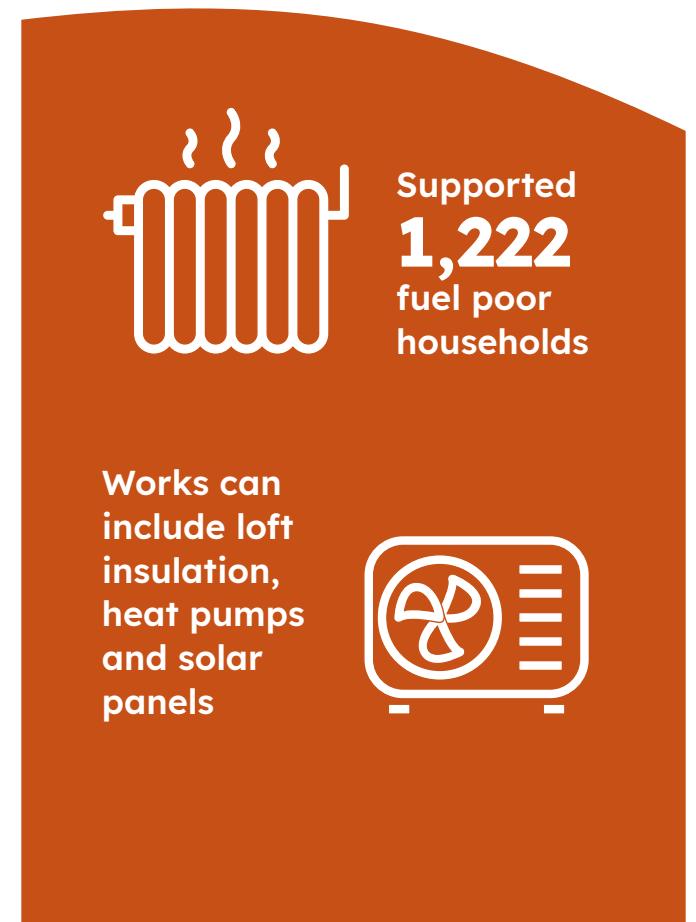
### Warm Homes Essex - Energy and financial wellbeing

Essex County Council (ECC) has partnered with Citizens Advice Essex to provide support to people struggling with their financial wellbeing and in particular their energy bills. The focus of the project is to support those whose health is adversely affected or at risk from living in a cold home. This includes older people, people with illness or disabilities or families with children with asthma. The advice provided by the service is intensive and personalised, taking place over an extended period in order to ensure everything that can be done to improve the householder's circumstances is done. This may include maximising benefit entitlements, resolving disputes with energy suppliers, addressing debt problems and applying for grants to improve the energy efficiency of the home.

To date the project has engaged with 2,516 fuel poor households and provided support to 1,222 of them, helping residents to claim an additional £2.4 million in benefits.

### Grants for Upgrading Insulation & Heating

There have been multiple tranches of funding available from central Government to support insulation, new heating and renewable technology installation into homes where residents suffer from fuel poverty. Grants aim to reduce the number of people living in cold and poorly insulated homes by providing free energy efficiency upgrades worth on average £10,000 per household. Works can include insulation measures like loft insulation, new heating systems including heat pumps, and renewables such as solar panels.



Homeowners with a household income of below £30,000 living in Energy Performance Certificate D, E, F or G rated homes may be eligible for support. Private rented properties can also qualify for grants of up to £5,000 with landlords needing to match fund upgrades.

The first of these schemes: the Green Homes Grant Local Authority Delivery scheme saw seven of the county's city, district and borough councils – Braintree, Chelmsford, Colchester, Epping Forest, Rochford, Tendring and Uttlesford, and ECC - work in partnership to secure and deliver £800k of funding. This enabled 83 homes to be retrofitted with external wall, loft and cavity wall insulation as well as air source heat pumps.

Further tranches of funding have been secured: £5.2m in 20/21 and £17.2m in 21/22 (this funding runs through to March 2023.) These are delivered by the Greater South East Net Zero Hub with support from ECC and the district, city, borough and unitary authorities. Residents can apply by completing the [Sustainable Warmth Scheme Application Form](#).

Essex residents who live in Eastlight Community Homes or Sanctuary Housing social housing stock have also benefitted with funding of £2.5m to support similar improvements to properties across Essex through the Social Housing Decarbonisation Fund Wave 1 project, led by ECC.

Local authorities across Essex will continue to work with Government to ensure Essex residents get the maximum benefit from Government grant programmes.

Worker installing insulation as part of the Sustainable Warmth Scheme





## Case Study: Mr and Mrs Wilkins – Braintree

After an unseasonably cold spring, exacerbated by an outdated heating combination of storage heaters and a log burner, Terry and Gillian Wilkins had an air source heat pump installed at their property as part of the Essex County Council-led Green Homes Grant Local Authority Delivery scheme.

Mr. Wilkins explained: “Our old heating setup wasn’t very efficient. Initially we were looking to replace it all with newer, more economical storage heaters but air source heat pumps were suggested to us. We were surprised to learn that the pump could be fully funded by the Green Homes scheme!”

With up to **£10,000 of funding available** and further information provided by Aran Insulation and contractors at Warmer Homes UK who installed the pump, it was clear to Mr. and Mrs. Wilkins that their home would be far more sustainably run once the heat pump was in place.

Mrs. Wilkins said “The heat pumps were totally new to us and we didn’t know anyone else who had one, but we were happy to try them as our storage heaters didn’t provide enough heat. Having the heat continuously is something we’re really looking forward to this winter, as the house used to get very cold towards the evening when we had used the heat from the storage heater.”

She added, **“It’s early days for us having this pump installed but we’ve had constant hot water and the pump doesn’t make any noise, it’s not intrusive.”**

A renewable energy source, air source heat pumps are an ideal option for households looking to reduce their carbon footprint and benefit from reduced running costs. Generating more energy than they use, heat pumps are around three times more efficient than a boiler, and they can save an even greater percentage on household heating bills if they replace more expensive systems such as electric storage heaters, oil, LPG (liquefied petroleum gas) or coal.

The couple enthusiastically recommend the scheme, which has now been replaced by the very similar Sustainable Warmth fund, to other eligible households and told us “We’re even looking into solar panels as well now for our home. That’s the next step we’re researching now in terms of future cost savings and reducing our carbon footprint.”

“We just feel so grateful to have had this whole installation fully funded by Essex County Council and the Green Homes Grant Local Authority Delivery scheme, and we couldn’t fault the process at all.”

More details and case studies here - [Green Homes Grant Local Authority Delivery Scheme | Essex Climate Action Commission](#)

## Essex Businesses

Many Essex businesses are also taking action to tackle their buildings and cut their energy bills at the same time.

**Braxted Park Estate** is a successful and diversified business which incorporates weddings and events, property management and a productive arable farm. The owner is committed to tackling climate change at the Estate and has already put in place a range of measures. In 2009, the five oil-fired boilers in the park's Mansion House were replaced with a cutting-edge renewable biomass boiler.

Woodchip to fuel the boiler is sourced from the estate itself through a sophisticated coppice programme, which sees woodland harvested in a 30-year rotation method. Installing a biomass boiler has reduced the Estate's reliance on kerosene by 47,000 litres per year.

## Low Carbon Across the South and East – LoCASE

LoCase offer grants of up to £10,000 until spring 2023 to make business more sustainable, reduce greenhouse gases and cut energy bills. Since the LoCASE funding programme started in 2016, £2.6m has been awarded to 397 businesses, with an estimated reduction of 2,902 tonnes of greenhouse gases equivalent emissions and £992,534 cost savings per annum within Greater Essex (including Southend and Thurrock).



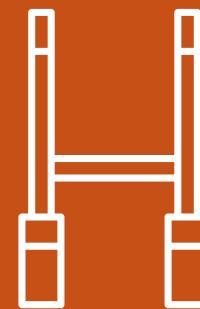
Kerosene use  
reduced by  
**47,000 litres**  
per year



Grants of  
up to  
**£10,000**  
available

## Case Study: Thurrock Rugby Football Club

**Thurrock Rugby Football Club** was awarded £10,000 by LoCASE (as well as advice and support), to install heating and hot water systems. This helped to deliver annual energy savings of 48,240 kWh, along with emissions savings of over 41 tonnes. These measures have saved the club almost £10,000 per year on their energy bills. The club also installed new shower heads, which deliver water at seven litres per minute, rather than the 10+ litres per minute the club was using. The total cost for the project was over £26,000 and the total value of the grant requested was £10,000, representing a 37.31 per cent grant intervention rate.



Emissions  
savings of over  
**41 tonnes**



## Public Sector

Many local authorities have committed to making their own properties net zero by 2030 including: Basildon, Braintree, Chelmsford, Colchester, Epping Forest, Harlow, Tendring, Uttlesford and Essex County Council. To support these ambitions, many public sector bodies are accessing grant funding. ECC has secured funding from central government to install a range of decarbonisation measures in its buildings. These include air source heat pumps (ASHP) (installed at Essex Records Office, Goodman House, Witham Adult Community Learning (ACL) and Great Notley Park); double glazing (across 21 schools and 15 core sites); and solar PV installations.

The [NHS](#) nationally has committed to reach net zero by 2040, with an ambition to reach an 80 per cent reduction by 2028 to 2032. In June 2022 Mid and South Essex NHS Foundation Trust completed works at [\*\*Broomfield and Basildon\*\*](#) hospitals to improve their energy efficiency, lowering bills and slashing their annual carbon emissions by over 2,421 tonnes.

### Case Study: Kingswood Primary School, Basildon

This school has been fully remodelled, with 600 square meters of double glazing to improve the building fabric – at a cost of £0.5 million – following the best practice zero carbon approach of “fabric first”. This was funded by Government’s Public Sector Decarbonisation Scheme and – together with the installation of 134 solar panels – it is saving the school over £12,000 a year on electricity bills alone. The improved insulation from the double glazing will in turn reduce heating demand, setting the school up to transition to low carbon heating when their end-of-life gas heating system is replaced with a new air source heat pump unit.

This year will see an additional solar installation, helping to offset the increased electricity demand from the new heat pumps. One of the biggest barriers to projects of this kind is the fact that all the electrical infrastructure often needs upgrading to meet the increased demand for electricity. This can come at significant cost and disruption – with nearly £100,000 of works required by UK Power Networks over a period of weeks to upgrade the electrics for this site.

This example highlights what we are planning to complete on our whole school and core estate. In the next 12 months we hope to have visited and surveyed at least 50 per cent of our estate and have a range of projects ready for future funding opportunities.

This will also enable us to group together low carbon projects – with the potential to use a framework to deliver groups of work – securing economies of scale and quality of installation.

## Building For the Future

As well as tackling our existing buildings, it is more important than ever that we are building new homes that are fit for our low carbon future and we need to build around 200,000 additional homes by 2050. Essex has seen its first net zero carbon housing developments with Brentwood Borough Council on site now building 62 net zero carbon homes, and recently submitted plans for permission for a second scheme of 40 net zero carbon new homes. Essex Housing has committed to a pilot development which will be net zero in construction and operation as well as tackling resilience challenges including reducing risk from flooding, overheating and water scarcity.

Government introduced new building regulations in [December 2021](#). This has had immediate impacts, with these regulations coming into effect in June 2022 that meant CO<sub>2</sub> emissions from new build homes must be around 30 per cent lower than previous standards and emissions from other new buildings, including offices and shops, must be reduced by 27 per cent. All new residential buildings, including homes, care homes, student accommodation and children's homes, must also be designed to reduce overheating, making sure they are fit for the future and protect the most vulnerable people.

Further changes are due to come in 2025 when the Future Homes and Buildings Standards come into force and will ensure new homes built from 2025 produce 75-80 per cent less carbon emissions than homes delivered under the 2013 building regulations. New homes must be fitted with low carbon heating, with heat pumps expected to be one of the main sources of heating in new homes built after this date.

While Government standards are tightening, further work has been going on in Essex to support high quality, net zero homes that will not require expensive alterations in the future and offer home-owners the lowest possible energy bills. Emphasis must be placed on embedding energy efficient building design. Our evidence shows that to exceed the Future Homes Standard to deliver net zero operational carbon is a relatively minor cost difference of between [£2,000-£3,000 per new home](#).

## Essex Design Guide Tackles Climate Change

Working with the Essex Planning Officers Association (EPOA) Chief Planners, we remodelled and introduced strategic themes into the new web-based Essex Design Guide. The overarching theme of the Design Guide is [climate change](#), with the other core themes being: Active Design Principles; Ageing Population; Health and Wellbeing; Digital and Smart Technology; and Garden Communities. The Essex Design Guide pulls together best practice and design guidance. Further work continues to bring new insight including new guidance on solar gain and overheating, and will soon be updated to provide helpful guidance on heritage design and climate change to help those people who live in listed buildings or within a Conservation Area. Working with EPOA the Essex Design Guide will continue to be updated into the future as new national and local studies/guidance are published.



## Walkable Neighbourhoods (WN)

A study on Walkable Neighborhoods has been commissioned which will explore the potential costs and benefits of walkable neighbourhoods versus traditional developments. It will look to understand and address potential barriers to implementation such as delivery of key services and facilities within development, and also highlight the added value that walkable neighbourhoods provide. The study is due to be published Autumn 2022.

## Climate and Planning Unit (CaPU)

The new [CaPU](#) has been established as a new climate planning advice service that will directly support local planning authorities. Officers will assist planning officers in working with developers to help design the layouts of new developments and new buildings to be net zero. It has also established a working group for climate planning policy, helping to support planning authorities (district, borough and city councils) to build a robust, common evidence base to support local plan preparation in relation to climate-related policies. Support is provided on pre-application and planning application advice on climate change and wider sustainability matters and CaPU is extending its reach to provide more detailed technical advice on energy and environmental engineering matters.

## Climate Action Charter for Developers

The Essex Developers Group comprises private companies and Housing Associations who build homes across Essex. The group works with the Government, Housing Minister, Homes England and the South East Local Enterprise Partnership to accelerate housing delivery and affordable homes. Key areas of focus include planning, viability, construction skills, climate action, quality design and supporting SMEs/smaller house builders.

In June 2022, The Essex Developers Group (EDG), working with the Essex Chief Planners produced the [Essex Developers Climate Action Charter](#), which has also been endorsed by the Essex Planning Officers Association (EPOA).

The Developers' Charter is the first of its kind in the UK and is a step forward in working towards common net zero goals with the private sector. It sets out real commitments through the Essex Developers' Group for a range of actions that will help ensure the highest energy standards in new building.



## Essex Schools

All new school buildings are now commissioned as net zero carbon in operation and have been for approximately a year now, relying on innovation to mitigate the cost of any further building features such as solar panels and heat pumps.

The service has commissioned three new primary school buildings to be opened in 2024, and all are being designed to be net zero carbon in operation. The ECC Cabinet recently approved two of these new schools. Engaging with the Net Zero Innovation Network (please see [page 43](#)), the service is exploring how the surplus renewable energy generated by the solar panels on our schools can be best utilised, especially during the summer months and holiday periods. This will help to ensure that the buildings are not just net-zero on paper, but in practice, and generate wider financial benefits.

In practice, this could mean that buildings are able to generate excess energy during the holidays (particularly summer), which could be used to help offset financial costs elsewhere.

### Case Study: New school buildings

Essex County Council's (ECC's) first new school buildings specifically designed to be net-zero carbon in operation were handed over to Clacton County High School (Clacton), Sweyne Park School (Rayleigh) and The Colne Community School & College (Brightlingsea) at the end of 2021. Designed with an improved building fabric, efficient heating systems, solar panels and heat pumps, the latest building monitoring information shows they are performing well and generating significant amounts of renewable energy which is reducing the carbon footprint of our school estate.



The Colne Community School & College, Brightlingsea





## 4. Transport

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In 2020, transport was responsible for 24 per cent of the UK's greenhouse gas emissions and is the largest, single contributor to the climate crisis. It is essential that travel is decarbonised if we are to meet the UK's climate commitments ([2021-provisional-emissions-data-tables.xlsx](#)). In Essex, we face particular challenges because so many of our population live and work in rural areas and this translates into more car journeys.

Around a quarter (354,669) of our 1.4 million population [live in rural areas](#) and, due to the increased distances to key services and main transport links, they are more inclined to commute by car and travel 53 per cent further each year than the majority of people living in urban areas.

Across the county, we know that people are reluctant to switch from their cars because of a lack of reliable, fast, and efficient public transport and the perception that the roads are not safe for cycling and walking. In 2021, just 7.7 per cent of Essex residents cycled at least [once a week](#). We know, too, that more and more children are being driven to school than before the COVID-19 pandemic, with only 2 per cent of children cycling to school in 2021 ([according to Department for Transport data for the East of England](#)).

Despite these challenges a lot of progress is being made. [Transport East](#), which sets the strategic framework for transport across the East of England, has set out in its draft strategy an ambitious target of reaching net zero transport by 2040.

## New Local Transport Plan with a key focus on decarbonisation

Essex County Council (ECC), the local highway and transportation authority, has adopted a new vision for transport in Essex to avoid unnecessary journeys, shift to public and active travel and improve journeys by supporting active travel and electric vehicle infrastructure.

The Local Transport Plan (LTP) is the council's most important statutory transport document. It sets out our aspirations for improving travel in the county, demonstrating the importance of meeting these aspirations to achieving sustainable long-term economic growth in Essex and enriching the lives of our residents. The existing document, LTP3 was written in 2011 and needs updating to reflect new national and local priorities such as decarbonisation and active travel. Work on a new Local Transport Plan LTP4 is underway.

## Essex Bus Service

ECC published the Bus Service Improvement Plan in October 2021 which set out a range of measures to build back bus usage, including shelter transformation projects to create a single high quality bus shelter estate. The creation of a new [Enhanced Partnership](#) with bus operators aims to deliver the vision and ambition set out in the Bus Service Improvement Plan, to improve the quality and reliability of bus network across Essex, including introducing digital multi-operator tickets.

## DigiGo

DigiGo, ECC's first fully electric minibus service offering on-demand and pre-bookable travel with no fixed route or timetable, was launched in April 2022. Minibuses can divert on and off journeys within their operating area for passenger collection and drop off, while passengers can book a pick up using the dedicated app. The pilot significantly increased patronage since the start, with exceptional feedback - and the [service has now been expanded](#) to include Great Dunmow, Stebbing, Great Saling, Great Canfield and the surrounding areas.

## TravelEssex

TravelEssex, ECC's new bus identity, was launched in June to rebuild the transport network after the pandemic and encourage people to swap from car to bus. A complementary journey planning app was launched and this has been downloaded over 15,000 times. You can download the app on the App Store or GooglePlay.





## Case Study: Climate Awareness Train Event

The day was sunny and the platform full of expectant travellers for our first Climate Awareness Train where Essex County Council's Climate Czar Cllr Peter Schwier launched "The Essex Advice Pack". The pack for Essex residents sets out actions and advice on how we can all play our part in tackling the climate crisis.

The Essex and South Suffolk Community Rail Partnership worked in partnership with the Essex Climate Action Commission, the Essex Path to Prosperity Project and ECC to run the event aiming to encourage people to travel by train.

A first in the country, travellers took a train trip, a guided walk and a talk on the local area, with a focus on climate change. Everyone got an activity pack including a wordsearch on trees and shrubs, and an I-spy birds activity, which kept the children busy and engaged.



For **each person** buying a train ticket, Essex County Council  
**planted a tree**  
- a great addition to the event.

## Active Travel

### Walking

Essex County Council (ECC) formally adopted Essex's first ever [Walking Strategy](#) in Autumn 2021. It introduces nine objectives from increasing walking for everyday journeys such as getting to school to better design and enhanced accessibility.

### Cycling

#### Cycling in Colchester

In March 2022, ECC was awarded [£1.3M from Active Travel England](#) to improve walking and cycling in Colchester town centre. The funding will be used to create a segregated cycle route from the High Street down East Hill, starting at the junction with Queen Street and progressing down East Hill. It finishes where the route turns off to become a fully off-road route towards the University. The route also received match funding from the Colchester Town Deal.

#### £100,000 to cycling groups and charities to support cycling in Essex

ECC cycle grant has been running for about 6 years and has already awarded close to £1million in funding to organisations throughout the county who are working to get people cycling. This can range from those needing support learning to ride or accessing a bike, to those who are more confident wanting to explore more of Essex on two wheels. ECC has awarded around £100,000 in the last 12 months to local cycling groups and charities including: Hadleigh Park Cycles Community Interest Company, for learn to ride sessions for EYFS pupils on Canvey Island; and Dr Bike and Fox Cycles, for balance bikes, staff training, and venue hire for learn to ride sessions.

#### Essex Pedal Power (EPP)

This [innovative pilot scheme](#) providing free bikes to residents in the county's most disadvantaged communities, to significantly increase cycling, active travel and physical activity levels, celebrated its first anniversary in July. EPP is a partnership of Active Essex's Local Delivery Pilot, ECC, The Active Wellbeing Society, Tendring Council, Community Voluntary Services (CVS) Tendring, Sport England, Cycling UK and community groups in the area. Over 300 bikes have been given out already, and the scheme will expand into Colchester in Autumn 2022.





GRIDSERVE forecourt



E-scooting in Colchester

## Monitoring: Better Data for the Future

As part of the wider monitoring and evaluation programme for Active Travel in Essex a number of Vivacity Sensors (which provide accurate, anonymous and detailed data insights on road user behaviour) are being introduced at strategic locations across the county. These sensors produce detailed counts of different modes of transport and provide accurate robust data to support future funding bids.

## Electric Vehicles

There were around [920 plug-in cars and light goods vehicles in Essex in 2021](#), but only [361 public charging points](#). Essex County Council (ECC) is working with partners to boost charging across the county and is developing an electric vehicle (EV) and Charging Strategy for Essex. It is expected to be out for consultation in 2023. Braintree is already home to the UK's first solar powered electric car charging forecourt, GridServe.

## Escooters

The Department for Transport-approved escooter pilot launched in six locations in Essex during Winter/Spring 2022/21. Operated originally by Spin, and now by Tier, the trial explores the role and value of a new net zero transport option to our transport network. Since it launched, more than 11,000 riders have taken more than [1 million rides](#), with 82 per cent choosing an escooter over a car at least once.

## 5. Waste

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In 2020-21, over 725,000 tonnes of waste were collected, treated and disposed of by the 12 district, borough and city councils in Essex and Essex County Council (ECC). The authorities all work together as the Essex Waste Partnership.

The average Essex household threw away more than a tonne of waste during 2020/21. Despite recycling over 51% of this we are all generating too much waste, and throwing away things that could be reused or recycled.

Government have set new ambitions for waste. The Waste Circular Economy Regulations in 2020 introduced new targets for local authorities to achieve 65 per cent recycling by 2035 and capped the amount of waste going to landfill at 10 per cent or less by 2035. ECC aims to move to zero land fill by 2030.

The 2021 Environment Act is expected to lead to more accessible and consistent recycling services, the introduction of deposit return schemes, and greater responsibility on the packaging industry to reduce packaging and fund waste services. The Essex Waste Partnership is working with Government to ensure Essex realises the full benefit of these changes which will take place over the next few years.

### Essex Waste Strategy

The Essex Waste Partnership, made up of ECC and the 12 borough, city and district councils, has been working collaboratively to develop and deliver a new Essex Waste Strategy. The Strategy will enable Essex to make the right choices to reduce waste, maximise reuse and recycling, and deliver waste management services which reduce greenhouse gas emissions. We anticipate that the draft strategy will go out for consultation in 2023 and will be engaging with industry, business and communities.





Freegle - Don't throw it away, give it away!



## Love Essex

[\*\*Love Essex\*\*](#) is the campaign run by the Essex Waste Partnership to help residents reduce waste and increase reuse and recycling. Over the past year the award winning ‘Love your Period’ and cloth nappy campaigns helped reduce waste going to landfill, and [\*\*Freegle\*\*](#), an online platform, enabled people to give away – rather than throw away – items, supporting reuse of a whole range of goods.

### Love Essex Fund

In 2022 alone, the Love Essex Fund provided micro-grants of up to £500 to 40 separate projects run by organisations, individuals and schools looking to reduce household waste across the county. These projects included a repair café run by Radwinter Recreation Ground Charity, the Colchester Eco Festival 2022, and skills-sharing workshops led by A Thread Above the Rest in Tiptree. ECC has developed some new videos made to highlight projects/organisations that were funded in the most recent round of the [\*\*Fund in February 2022\*\*](#) (which includes a round-by-round breakdown of recipients).

[\*\*Pitsea School Uniform Bank\*\*](#) (funded in March 2021) is a good example of the kind of reuse project being supported. There were over 80 applicants for the latest round of funding.

### Love Essex Champions

Love Essex champions is a volunteer scheme that started in September 2021 (replacing the former Waste Busters). A year on, it already boasts 160 members. Champions have taken part in monthly challenges and shared knowledge on how to prevent waste and adopt circular behaviours among the group and within their own networks.

## **Case Study: Chelmsford Food Waste Pilot**

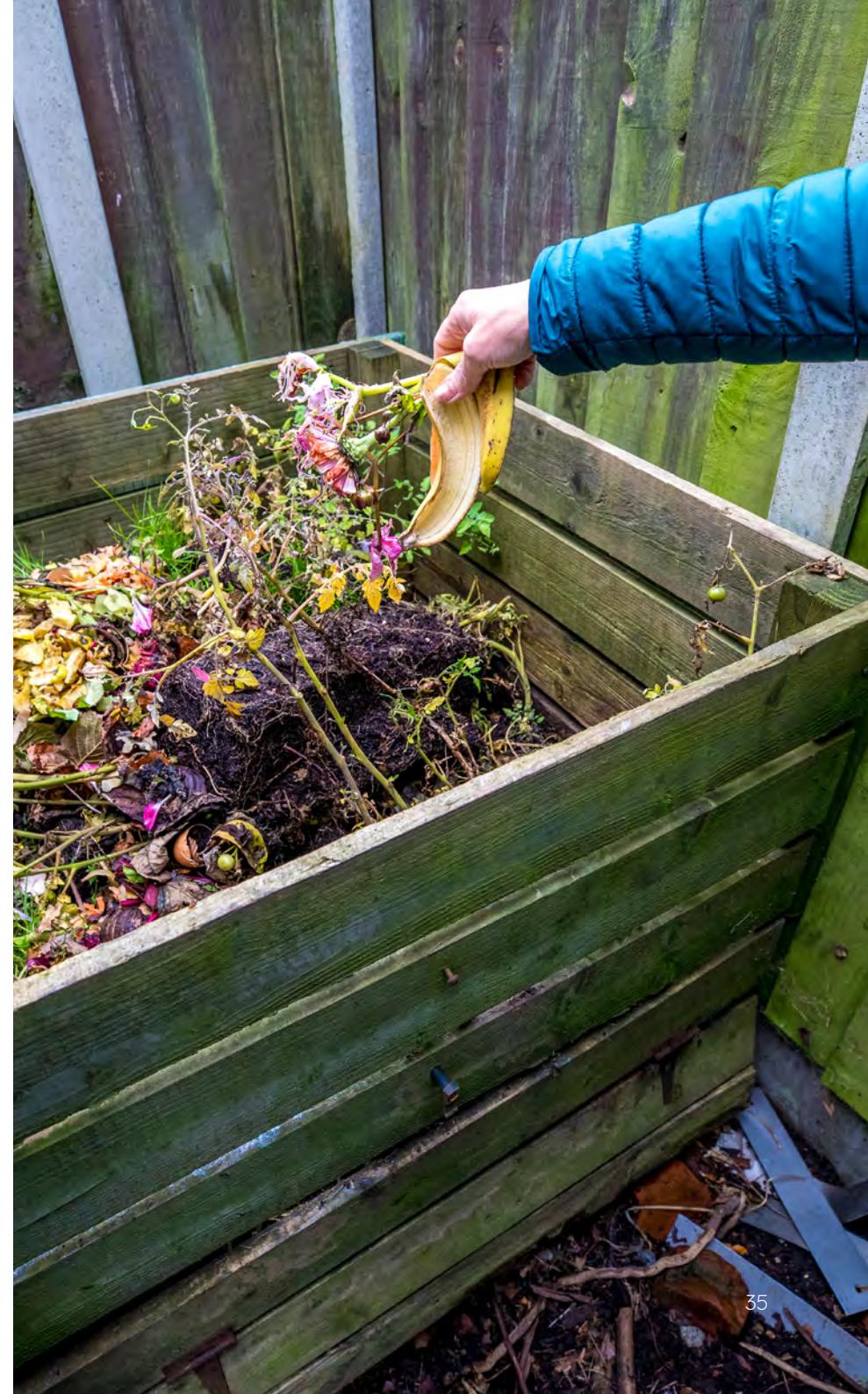
We aim to make beneficial use of all food and garden waste in Essex, rather than sending it to landfill. Most households in Essex are offered separate food waste collections and this is then sent for anaerobic digestion, generating energy and fertiliser. A quarter of black bag waste in Essex is still food. Food waste that goes into the standard black bag and then into landfill is a major cause of methane – a powerful greenhouse gas.

ECC and Chelmsford City Council have been testing different approaches to tackling food waste to encourage more people to use the food waste collection service. Early indications from the initial trial show an increase in the amount of food recycled and a reduction in food within the general waste. Further roll out to the whole of Chelmsford is currently underway and the impact will be evaluated later this year, which will enable us to identify the most effective elements of the trial for use across the county in 2023.

## **Composting**

Love Essex has this year been offering a free, online course on composting provided by the experts at Garden Organic. The course is suitable as an introduction for beginners or enhancing the knowledge of those who are more experienced. Through the course, residents have been able to discover the benefits, techniques and types of home composting, with the help of informative videos and quizzes. This will support delegates in transforming food and garden waste into rich compost for feeding plants and keeping moisture in the soil.

In addition to the course, Love Essex also offers reduced-price compost bins to all Essex residents!



## Kitche

Over 800 Essex residents have now signed up to the Kitche app in a bid to reduce food waste. Kitche is a free app designed to help residents save money and reduce food waste at home. The average Essex household wastes £60 a month by throwing away food that could have been eaten. Residents can download the app, keep track of the food being bought and save money.

## The Lighthouse Partnership

Residents can now drop off their unwanted large electrical appliances to the Lighthouse Furniture Project at Brentwood Recycling Centre. These are then repaired and refurbished ready for reuse, to help support people in Essex with low-cost electrical appliances and minimise waste.

## The BLUEPRINT to a Circular Economy Project

A circular economy is an economic model whereby waste is eliminated, and closed loop systems are created to ensure the continual and effective use of existing resources for as long as possible.

Essex County Council (ECC) is leading a European funded project to explore how local authorities can support the move to a circular economy: the BLUEPRINT to a Circular Economy. ECC has delivered a number of initiatives and trials to support and test the transition to a more circular economy. A [Circular Economy Directory](#) listing businesses and charities actively working to accelerate a circular economy helps communities cut waste. The [Library of Things](#) allows residents to borrow useful household items from Essex Libraries rather than buy them. Offering free reusable period products to over 300 users of the youth club and food bank in Canvey reduces the number of disposables going to landfill and the youth club has run period parties to offer advice and demonstrations to different age groups to support the transition to more sustainable products.

The BLUEPRINT project is developing a model to help over 30 Local Authorities transition to a circular economy and running a five-day virtual roadshow for 700+ attendees.



## Case Study: Plastic Clever Schools

The BLUEPRINT project has recently supported the Plastic Clever Schools programme, by sending a monthly newsletter on the circular economy to participating schools.

49 schools in Essex have already joined the programme and numbers keep increasing. North Crescent Primary in Wickford has completed the first level, "Inspire".



**49 schools  
in Essex have  
joined the  
programme**

## 6. Community Engagement

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It is clear that communities across Essex – residents, schools, universities, businesses, all our public sector institutions - are all starting to take action to protect the planet. Over the past year we have developed a raft of resources and toolkits to support everyone to play their part.

Essex Association of Local Councils (EALC) has worked with Essex County Council (ECC) to support local parishes in tackling the climate crisis. EALC has run a series of webinars over the past year for town and parish councillors, supported by ECC, across a range of themes such as energy, transport and green growth and a climate conference in January 2022. We are currently planning to host a webinar for the Rural Community Council of Essex (RCCE) members on energy for winter 2022.

Essex is one of only five authorities selected to be part of Involve's Local Climate Engagement Programme and will be working with up to three parish councils and their communities to develop detailed plans for local climate action.

There is a raft of information online, with a new website and social media channels for the [Essex Climate Action Commission](#) alongside a new e-newsletter which is sent to over a thousand residents and businesses each month. The [Essex Climate Action Commission YouTube channel](#) has a range of films showcasing excellent work across the county.



Community-led Essex is Green social media channels on [Facebook](#), [Twitter](#) and [Instagram](#) continue to gather pace too, achieving high levels of engagement each day. Over the last year, the Essex is Green Facebook page has gained almost 1,000 members and achieved monthly average impressions of 250,000 to 300,000.

The Essex is Green Changemakers group, which supports people to manage climate discussions on their own community channels, has almost 250 members and the Discussion Group boasts nearly 1000 members.

A new app is currently in development to support Essex residents in taking action on climate change. Carbon Cutting Essex will launch in winter 2022 and will help residents to understand their carbon footprint and will encourage changes in behaviour.

There have been multiple climate events across the county including: The Big Green Business Expo (April 2022); Festival of Business (April 2022); Climate Awareness Train (May 2022); Essex Book Festival (June 2022); Manningtree Earth Festival (June 2022); Sustainability Fair, University of Essex Business School (June 2022); Can Do Health and Care EXPO (July 2022); Rochford District Council Business Breakfast (July 2022); Heybridge Basin Regatta (July 2022); Eco Festival, Colchester Castle Park (September 2022); Epping Forest Youth Council (September 2022); Love your Library, Love your climate day (October 2022).

We have had a presence at many other events across the county, from career workshops with students to business networking festivals. Future events are published on the Essex Climate Action Commission website.

## Climate Action Advice Packs

Knowing how to reduce our carbon footprint is challenging for all of us and can often feel overwhelming. That is why Essex County Council (ECC) and the Essex Climate Action Commission have launched three advice packs that offer a range of solutions and ideas to help residents, businesses and schools reduce their carbon footprint. The packs are available for [download on the Essex Climate Action Commission website](#).

The Essex Climate Action Commission has also distributed the packs to a wide range of individuals, schools and organisations across Essex. View the [launch event here](#).

The **Residents' Advice Pack** helps Essex residents understand how they can reduce their carbon footprint by making small changes in their everyday lives. It includes great advice on cutting energy bills and how to access grants.

The Residents' pack has been sent to all Essex libraries and [Members of Parliament](#), and organisations including [Friends of The Earth](#), [The Church of England](#), [Essex Women's Institute](#), [The University of Essex](#), [The Essex Wildlife Trust](#), and [Anglian Water](#).

The **Business Advice Pack** contains practical recommendations to help businesses and organisations take advantage of opportunities connected to the move to low-carbon living. It includes practical advice and links to grant and funding support to help businesses thrive while reducing their impact on the environment, including help to cut energy bills.

The Business pack has been circulated to the Essex Chambers of Commerce, The Institute of Directors, The Federation of Small Businesses, the Business Intermediaries Forum and others.

The **Schools' Advice Pack** provides an actionable framework for carbon reduction for schools and educational establishments across Essex. It gives practical and cost-effective (often free!) changes schools can make to help reduce their carbon emissions and to operate sustainably, with links to ongoing support and programmes for schools.

The Schools' pack has been sent to educational establishments across Essex, both primary and secondary, and a pack for Early Years providers is currently being developed.





**1. Transport**

It's time to start thinking about how we get from A to B.

Our motor cars are one of the most intensive sources of personal emissions. Driving one long journey, Essex to Edinburgh for example, would emit nearly four times the carbon (CO<sub>2</sub>) emissions as a coach or the train. **One mile in an average UK car can emit around 11 times as much**, compared to public transport per mile travelled – or 88 times the amount of CO<sub>2</sub> compared with an electric bus!

There are over 800,000 cars in Essex, with 9% of car journeys under 5 miles<sup>1</sup> – a distance that could be covered comparably quickly by bike, on foot or via public transport – just with far fewer emissions. If every household in Essex replaced a one mile trip each week with walking or cycling we could save multiple thousands of tonnes of carbon<sup>2</sup>.

**Alternatives to driving**

- Swapping shorter journeys for walking and cycling, a traditional bike or an e-bike. The [Go'Green](#) website has lots of great information on how to do this.



## Case Study: Carbon Literacy Training

This year, Essex County Council (ECC) has rolled out Carbon Literacy training to help employees and elected officials understand more about climate change and the actions we can all take to ensure that Essex achieves its goal of becoming net zero by 2050.

Through undertaking the course, Emma, who is part of the Environment and Climate Action communications team was able to broaden her knowledge of climate change and the local environment. She found it interesting to learn more about the fantastic initiatives throughout the county which have been launched to respond to climate change, such as the Essex Forest Initiative, the Climate Focus Area and the introduction of the UK's first electric vehicle charging forecourt at Braintree.

Emma also found it helpful to learn more about the resources available to find out about her carbon footprint, such as the WWF Carbon Footprint Calculator, as well as daily lifestyle changes which could be made at work and home to help Essex in its journey in becoming net zero. Energy saving tips and helping the environment through daily food choices such as eating less meat were of particular interest.



Emma completed the course having learnt more about actions that can be taken to combat climate change and reduce carbon emissions. She found that it was a welcome opportunity to take part in a nationally recognised course and now feels better prepared to tackle climate change in Essex.

Emma was one of the first council employees to receive carbon literacy accreditation and has since been joined by over 50 colleagues from across the organisation who have received their carbon literacy certificates. The training is currently open for all authority members and officers and is available until Spring 2023.

## Community Grants

The £500,000 [Climate Action Challenge Fund](#), launched by Essex County Council (ECC) in July 2021 supports schools and local communities to deliver their own climate projects. The scheme has received over 50 applications with [22 projects approved](#) and over half the fund has now been allocated. Pots of funding of up to £20,000 are available and to date a wide range of projects have been funded. School Eco clubs were proposed by Groundwork East and are currently in development. Hopes Sustain applied for funding to develop a pilot for Essex schools to help understand their energy usage and identify potential cost savings on energy bills. Applications to the fund will be accepted until the end of March 2023 or until all the fund has been allocated, whichever is sooner.

## Case Study: PACE Manningtree

PACE Manningtree is one of many organisations which has successfully applied for funding from ECC's Climate Action Challenge Fund. PACE, which stands for Practical Actions for Climate and the Environment, has received funding for two projects: an E-cargo bike scheme and the development of a booklet on how people can reduce their carbon footprint.

£5,000 in funding was provided to PACE to cover the costs of purchasing the E-cargo bike which offers an alternative and sustainable way of transporting goods locally. Both businesses and individuals can hire the bike. They can also choose whether to ride the bike themselves, or PACE can provide someone to ride the bike for a small additional fee.



## 7. The Just Transition to a Green Economy

A successful economy can only survive if it is built on a sustainable and healthy planet. The transition to a green economy is critical for the environment and for our economic futures. As well as cutting our emissions and enhancing our health and wellbeing, a green economy will deliver opportunities for business, high quality jobs and sustainable homes for Essex residents. Public and private organisations are leading change across the Essex economy.

### Essex Sector Development Strategy and Delivery Plan

In May 2022, Essex County Council (ECC) published a [Sector Development Strategy](#) which sets out how we will enable a stronger, more inclusive and more sustainable future economy across Essex. This is a long-term strategy which focuses on futureproofing the Essex economy and embracing the opportunities that the transition to net-zero carbon will offer.

The strategy is based on extensive research with over 600 local businesses and discussion with the 12 Essex district, borough and city councils and our two neighbouring unitary councils, three Essex Universities, business representatives from federated boards and sector specific organisations, as well as other key bodies such as local NHS trusts and national partners like Innovate UK. The strategy sets out clearly the future opportunities for our residents and businesses in key sectors: construction (including green construction and retrofit), clean energy, advanced manufacturing and engineering, digi-tech and the life sciences (including med-tech and care-tech).

Green growth is intrinsic to the future growth of all five priority sectors to ensure we meet our target for a net zero county. The Sector Delivery Plan setting out how we will deliver the Sector Development Strategy is due to be published in late 2022.



T.C.P visit, Cllr Schwier



Re Vamp Boutique visit, Cllr Schwier



White Dragon Activity Centre visit, Cllr Schwier



Worker retrofitting residential house

## Green Economy

Our ability to deliver green jobs for local people depends on us having the right skills here in Essex; the Commission report noted our universities, colleges, and schools should inspire and equip future generations with the skills we need to tackle the climate crisis.

ECC completed a review of the skills and training required to enable the shift to a more sustainable economy and the report, the Green Skills Infrastructure Review, was published in May 2022. Building on this evidence, ECC is working with partners across Essex, including training providers, businesses and anchor institutions, to develop a joint Green Skills Action Plan due to be published in Autumn 2022. This will support skills development in education, for new entrants to the labour markets as well as re-training and upskilling the existing adult workforce.

### The Retrofit Pilots

As we explored earlier in the report, retrofitting our buildings to be energy efficient and with new low carbon heating is essential. Essex County Council (ECC) and The Retrofit Academy Community Interest Company secured over £700,000 in Community Renewal Funding from central Government to deliver two ground breaking pilots in Essex.

As part of the work, the Retrofit Academy and Parity Projects have carried out research to understand the condition of current housing stock across the county with into the two pilot areas. As a result, we have been able to map the business supply chains that will help to support this growing economy.

ECC and Devon County Council were the first in the UK to host the “Fit for Retrofit” Programme for Housing Authorities – the results have been widely welcomed by participants:

**“The Fit for Retrofit programme demystified retrofit and explained why it’s so important. My only disappointment is that more of my colleagues could not attend.”** Rachel Glover, Basildon Borough Council

We are delivering a full retrofit professional skills programme from Level 2 – in understanding domestic retrofit (where no previous qualifications are required) right up to level 5 in retrofit coordination. This training will enable our residents to deliver, and our businesses to benefit from, the retrofit needed across the county. Estimates suggest that the economic opportunity retrofitting our buildings in Essex could be in excess of £15 billion, with more than 13,000 jobs created by 2050 ([LGA and Ecuity Consulting 2021](#)). Before the pilot, there was just one retrofit coordinator resident in Essex. Our programme will boost this number significantly. We have worked closely with Adult Community Learning (ACL) to deliver a “train the trainer” programme to address tutor shortages and ensure the benefits of the pilot will continue after completion in December 2022.



## The Net Zero Innovation Network (NZIN)

The [Net Zero Innovation Network](#) connects organisations, energy providers, businesses and educational institutions across the public and private sectors to develop pioneering sustainability projects and decarbonisation solutions. In 2022 we grew the membership with a clearer focus on delivery of projects to spark green innovation and provide opportunities for green growth. With over 80 members including academics, social housing providers, large organisations, social enterprises, community energy groups, and SMEs, the network brings them together providing a unique opportunity for innovation and collaboration. The Net Zero Innovation Network is structured across four thematic areas – built environment, energy, waste, and sustainable transport - each with a project pipeline and trajectory. The entire network comes together three times a year for a conference to actively support and develop project ideas. A bi-monthly newsletter is also distributed to members to keep them engaged with innovative news.

Though the Net Zero Innovation Network remains at an early stage, we have already moved from strategising and growing relationships in 2021 to a delivery focus in 2022 as the community begins to focus on priority projects and next steps. It's an exciting time for the Network and we can't wait to see projects begin to come to life.



## Essex Climate Action Commission

Some of the Essex Climate Action Commissioners are passionate in their support of a just transition to a green economy, through the creation of green jobs and opportunities for Essex businesses and social enterprises. They have committed to support Essex residents to access those opportunities and are leading and delivering three projects:

### Network to Support the Green Economy

We are creating an Essex young “heroes” programme, which will bring young people closer to the opportunities in the green economy through online media and peer to peer learning platforms and support. It will link sustainability-aware businesses to young people seeking work. This platform will link to those not in education or employment, provide real opportunity and be focussed in places in Essex which need the intervention the most. This links to the Essex Renewal Commission work, our skills programme, our Levelling Up work and our work in key localities. The platform will launch in spring 2023.

### Working Well for a Green Economy

Raising awareness and encouraging businesses to make small changes to improve the environment and help them achieve ‘Working Well Accreditation.’ We are supporting this by providing information, support and guidance through our partners at [Provide](#). We will be aiming to launch at the end of 2022.

## Green Entrepreneurs Programme

A bespoke offer of business support and advice aimed at young entrepreneurs aged 18 to 35 with innovative green business start-up ideas. The programme will start in November 2022. Coaching and mentoring, as well as peer support, will be provided by commissioners and external partners. The programme will support a Challenge Fund (funded by Essex County Council), offering a start up prize of £20,000 to help one winner access funding to support them starting up their new green venture.

## Public Sector Procurement

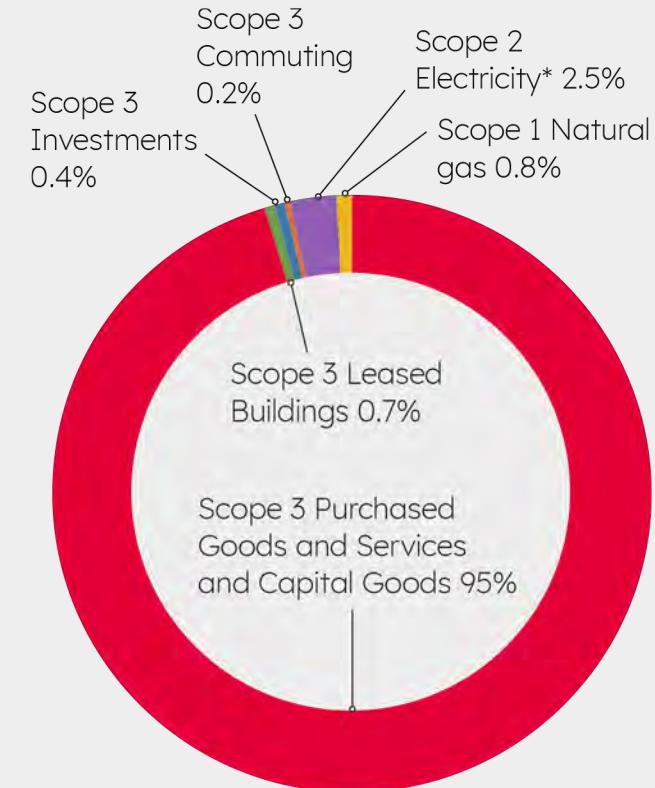
A recent carbon footprinting exercise has shown that purchased goods and services and capital goods account for 95 per cent of Essex County Council's (ECC's) total measured footprint.

In order to reduce the impact of our carbon emissions we will be considering the inclusion of carbon reduction plans (CRPs) in all our tenders over £100,000 per annum. ECC has already included the reduction of greenhouse gas emission as a key consideration in its upcoming waste contracts.

Suppliers will be asked to measure defined carbon emissions, set a net zero target as an organisation and provide an action plan to reach this target. Our next steps will include measuring contract specific emissions and rolling out training for our supply chain and local businesses to support them to reduce their carbon emissions.

Green procurement is a key way in which large public sector organisations across Essex can support their supply chains, including smaller companies in Essex, to reduce their emissions and move to a green economy.

ECC has been working with Anglia Ruskin University on a Local Government Association Net Zero Innovation Programme, which has researched the barriers local businesses face in transitioning to net zero and supplying public sector organisations. The report will be published in September, along with resources for businesses and other public sector bodies.



Essex County Council's total carbon footprint

Scope 1 – greenhouse gas emissions directly from operations that are owned or controlled by the reporting organisation. (for example emissions from fuel used for company-owned vehicles).

Scope 2 – indirect greenhouse gas emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting organisation.

Scope 3 – all indirect greenhouse gas emissions (not included in scope 2) that occur in the value chain of the reporting organisation, (such as business travel, transportation and distribution, purchased goods and services, investments and leased assets)

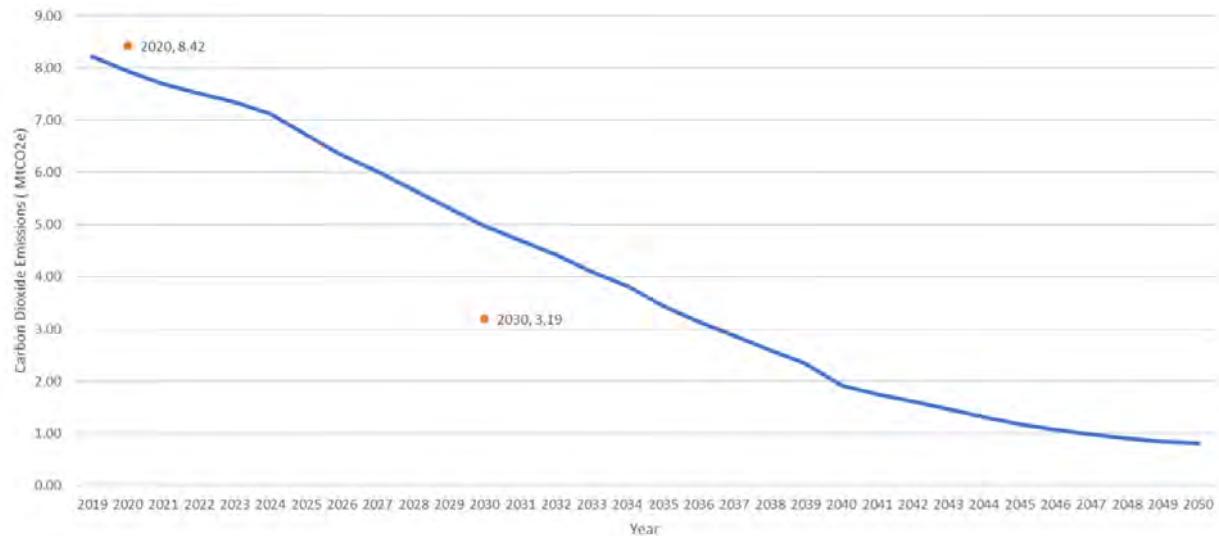
## 8. The Essex Pathway to net zero

“ net-zero refers to the target of reducing the greenhouse gas emissions that cause global warming to zero by balancing the amount released into the atmosphere from sources with the amount removed and stored by carbon sinks. This is also described as ‘carbon neutrality’. ” [LSE Jan 21](#)

### Understanding Our Greenhouse Gas Emissions

The Essex Climate Action Commission developed a net zero trajectory for Essex to 2050, based on current best thinking and the Commission’s recommendations. This shows how we need to reduce our carbon emissions if we are to achieve net zero by 2050 and it is shown in the following graph.

A pathway to net zero for Essex to 2050, which includes the Essex Climate Action Commission recommendations





Essex County Council (ECC) has committed to track the county's emissions against this trajectory every year, to gauge performance and ensure that the ambitions stated in Everyone's Essex 2021-2024, to encourage, accelerate, and ensure a smooth transition to renewable energy and decarbonisation, are being met.

We track the county's emissions using a tool called Scatter - Setting City Area Targets and Trajectories for Emissions Reductions. This tool, funded by the Department of Business, Energy, and Industrial Strategy (BEIS,) pulls from a wide variety of cited data sources and collates them all together in a single spreadsheet, is updated on a yearly basis and takes into the account the latest emissions factors and helps local authorities measure, track and analyse various scenarios to decarbonise sectors and infrastructure to reach net zero in a timely manner. This resource allows ECC to compare the overall and sector wide emissions against the Essex Climate Action Commission emissions trajectory to net zero. Our most recent actual figure is from 2020 (8.42 MtCO<sub>2</sub>e) which is 0.48 MtCO<sub>2</sub>e above target.

Our aspiration for 2030 is that we will reduce our emissions from 8.42MtCO<sub>2</sub>e to 3.19 MtCO<sub>2</sub>e. This target was set using up to date science-based methodologies and is aligned to the Paris Climate Agreement signed at COP 21 in 2015, when the global community pledged to keep average global temperature rise well below 2 degrees Celsius. Essex's current net zero trajectory does not yet meet this point in 2030, which highlights the need for an even greater rate of decarbonisation.

### Monitoring and evaluation of climate change in Essex

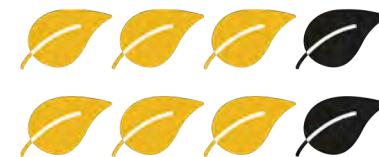
This year the net zero trajectory has been updated to include emissions from the agriculture and land use sectors and further adjusted to consider a new dataset for waste emissions. The waste data is from a national dataset produced by the Department of Business, Energy & Industrial Strategy (BEIS) for Local Authorities. Whilst Scatter does contain data with regards to the waste emissions in Essex, it was found to be significantly lower than expected. There has been no discernible change in throughput managed within the county waste authorities and thus this decrease was attributed to the methodology that Scatter uses. Whilst, the BEIS dataset uses national data and estimations, it looks at waste emissions that occur in Essex rather than just the waste emissions that are treated within the county. It should be expected that, as our net zero journey advances, we will be able to access new, more location specific data sources which will provide a more accurate picture, rather than relying on national level estimates.

It is worth noting that this data does not include figures on commercial waste, as on the national level this remains a key uncertainty in the emissions inventory and was highlighted as such in the sixth carbon budget by the Committee of Climate Change ([CCC, 2020](#) [The Sixth carbon budget waste - climate change committee, page 19](#)). This is further compounded by the fact that the Department for Environment, Food and Rural Affairs (DEFRA) only collects and compiles the data on a biannual basis, with little known about the recycling rate or appropriate emissions factors to apply. This gap is something that needs to be addressed and Essex County Council will look to do this in the future.

We can also think about our emissions in terms of a personal carbon footprint. BEIS publishes emissions for the UK within and outside the country's territorial borders which suggests that the average UK resident emits 6.04 (within territory) and 11.54 (total including outside of territory) tonnes of CO<sub>2</sub>e per person respectively. For the purpose of this report, only emissions occurring within the borders of Essex have been considered, as this is where most of the council's influence lies.



In comparison with the UK average carbon footprint (excluding emissions falling outside Essex/UK borders) the average Essex resident emits 5.62 tonnes CO<sub>2</sub>e per person:



UK Carbon Footprint (per person)



Essex Carbon Footprint (per person)

A visual comparison of UK & Essex's carbon footprint per capita

Department for Business Energy Industrial Strategy categories of UK territorial emissions

# Glossary

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## Anchor Institutions

The term Anchor institutions refer to large, typically public sector or non-profit organisations like hospitals, local councils, and universities whose long-term sustainability is tied to the wellbeing of the populations they serve. Anchors get their name because they have ‘sticky capital’ (i.e. are unlikely to move given their connection to the local population) and have a significant influence on the health and wellbeing of a local community through their sizeable assets. It is from this vantage point, that Anchor Institutions can make an important contribution to the local economy and local communities.

## Biodiversity

The variability among living organisms from all sources, including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems. The term also means, the variety of life at every hierarchical level and spatial scale of biological organisations: genes within populations, populations within species, species within communities, communities within landscapes, landscapes within biomes, and biomes within the biosphere.

## Biodiversity Net Gain

An approach to development, and/or land management, that aims to leave the natural environment in a measurably better state than it was beforehand.

## Built Environment

All forms of human-made environment from housing, industrial and commercial property, to hospitals and schools, streets, sidewalks, and even open spaces.

## Carbon Footprint

The total greenhouse gases emissions generated directly and indirectly by human activities, which are expressed as carbon dioxide equivalent during the period of a year.

## Carbon Neutral

A state by which the amount of greenhouse gas emissions released into the atmosphere as a result of an activity, is balanced by an equivalent amount being taken away via “offsetting” (see Carbon Offsetting), or removing from the atmosphere, an equivalent amount of carbon. Carbon neutrality is not associated with a commitment to reduce overall greenhouse gas emissions.

## Carbon Offsetting

Environmental practices and activities implemented to reduce emissions of carbon dioxide in order to compensate for unavoidable emissions made elsewhere, e.g. the creation of new woodlands and the restoration of peatlands, providing habitats for wildlife, and green spaces for the public. Offsets are measured in tonnes of carbon dioxide equivalent.

## Circular Economy

An economic model whereby waste is eliminated, and closed loop systems are created to ensure the continual and effective use of existing resources for as long as possible (see also Closed Loop System).

## **Climate Change**

A change in the state of the climate that can be identified (e.g. by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period (typically decades or longer).

## **Climate Crisis/Climate Emergency**

The term refers to the severe adverse effects of climate change because of human activity, posing a threat to the biosphere and humanity. This terminology reflects the urgency of action required to reduce or halt climate change and avoid potentially irreversible environmental damage.

## **Climate Focus Area (CFA)**

Areas selected to pilot and showcase best practise and accelerated action on climate change, in collaboration with public authorities, charities, residents, landowners and businesses. Targeting a designated area within the county allows for more focused, ambitious, and intensive action within shorter time frames where learning and acquired knew knowledge of positive impacts can quickly be disseminated across the county.

## **Closed Loop System**

The term refers to the product life cycle of the Circular Economy system where products are recycled and reused to produce additional products without degradation of properties. This system aims at waste elimination by converting the used product back to the raw material.

## **Coastal Flooding**

A situation when dry and low-lying coastal land is submerged by seawater because of waves, tides, storm surge, or heavy rainfall from coastal storms.

## **Commercial Waste**

Any waste produced from premises used for the purposes of a trade or business, including sport, recreation, education, or entertainment.

## **Community Energy**

The term refers to community-led projects that aim to reduce, purchase, manage and generate energy, whereby the local community benefits collectively from the outcomes. These projects can be wholly owned and/or controlled by communities or through partnership with commercial or public sector partners.

## **Composting**

The biological process of decomposing organic solid materials into simple organic and inorganic compounds. The process involves organic matter, e.g. plant materials and animal manures, moisture, oxygen, and bacteria. The product, a humus-like material, is a good plant fertilizer.

## **Critical Drainage Area**

Critical Drainage Areas, as defined in Essex County Council's Surface Water Management Plans (SWMPs), are areas of significant flood risk characterised by the quantity of surface water runoff that drains into an area, the topography, hydraulic conditions of local pathways (e.g. sewers and river systems), and the receptors that may be affected, such as people, properties and infrastructure).

## **Decarbonisation**

The process of removing carbon from a product or to reduce the amount of gaseous carbon compounds released in or because of a process.

## **Electric Forecourt/Electric Vehicle Charging Forecourt**

An all-electric vehicle charging facility.

## **Electric Vehicle**

A vehicle which runs either partially or fully on electricity through an electric motor, as opposed to using fossil fuels.

## **Energy Performance Certificate (EPC)**

A rating that measures the energy performance of buildings. The Energy Performance Certificate (EPC) is graded on a scale of A (most efficient) to G (least efficient) and have two metrics: a fuel cost-based energy performance rating and a rating relating to CO<sub>2</sub> emissions.

## **Essex Climate Action Commission**

The Essex Climate Action Commission was set up to advise Essex County Council about tackling climate change. It was launched in May 2020 for an initial term of two years and has since been extended for a further three years. The commission will run until 2025. The commission has over 30 members. They include local councillors, academics, business people and two members of the Young Essex Assembly.

## **Essex Design Guide**

The Essex Design Guide (EDG) has a long history, and nationally recognised as providing up to date best practice guidance to support good design, and place-making. In 2018, the EDG became the first interactive web-based design guide. In 2022, this was updated to place climate change as the primary overarching theme, in addition to other key themes, including Active Design Principles, Ageing Population, Health and Wellbeing, Digital and Smart Technology and Garden Communities.

## **Essex Waste Partnership**

The collaboration of Essex County Council with the 12 city, district, borough councils and the unitary authority of Southend-on-Sea Borough Council. This was set up to ensure cost-efficient and sustainable waste management across the county and Southend, with the aim to reduce and reuse as much waste as possible.

## **Fabric First**

A ‘fabric first’ approach to building design involves maximising the performance of the components and materials that make up the building fabric itself, before considering the use of mechanical or electrical building services systems.

## **Fertiliser**

A natural or synthetic substance which is added to the soil to promote plant growth.

## **Fossil Fuels**

Fuels such as coal, petroleum, and natural gas, which contain carbon and release energy in combustion. Fossil fuels were formed because of natural processes (such as anaerobic decomposition) acting on the remains of buried organic matter of ancient plants and animals, which began in the Archean Eon (4.0 billion to 2.5 billion years ago). Fossil fuels also include oil shales, bitumen's, tar sands, and heavy oils.

## **Fuel Poverty**

Fuel poverty in England is measured using the Low-Income Low Energy Efficiency (LILEE) indicator. Under the LILEE indicator, a household is considered to be fuel poor if they are living in a property with a fuel poverty energy efficiency rating of band D or below, and when they spend the required amount to heat their home, they are left with a residual income below the official poverty line. [www.gov.uk/government/collections/fuel-poverty-statistics](http://www.gov.uk/government/collections/fuel-poverty-statistics)

## **Geospatial Analysis**

Geospatial analysis is the gathering, and use of publicly available data, imagery, GPS, satellite photography and historical data, described explicitly in terms of geographic coordinates or implicitly, in terms of a street address, or postal code as they are applied to geographic models.

## **Green Construction (or Green Building)**

The term refers to both a structure and the application of principles in its design, construction and operation that aim to reduce or eliminate negative and create positive impacts for the climate and the environment, promote resource-efficiency throughout a building's life-cycle, and improve quality of life.

## **Green Economy**

A model of economy where the reduction of the environmental impact of business enterprises results in economic advantages for the companies themselves.

## **Green Growth**

A model of economic development that promotes environmental sustainability and synergies between environment and economy.

## **Green Infrastructure**

(see [Natural Green Infrastructure](#))

## **Green Procurement**

The process whereby organizations meet their needs of supplies and services, utilities and works not only on a value-for-money basis, but also with a commitment to use less harmful or environmentally friendly products and practices.

## **Green Retrofits**

(see [Retrofits](#))

## **Green Skills**

Green skills are knowledge, experience, values, attitudes and abilities that support carbon reduction and resource efficiency to increase climate resilience and enhance natural assets.

## **Greenhouse Gas (GHG)**

Gases that trap heat in the atmosphere and contribute to climate change. This causes the greenhouse effect. Water vapour ( $H_2O$ ), carbon dioxide ( $CO_2$ ), nitrous oxide ( $N_2O$ ), methane ( $CH_4$ ) and ozone ( $O_3$ ) are the primary greenhouse gases in the atmosphere.

## **Habitat**

The home environment for plants, animals, or other organisms; a place that meets all the environmental conditions this organism needs to survive, e.g. shelter, water, food, and space.

## **Heat Pump**

A device which can be used to cool or heat a building. It works by pumping or transferring heat from one place to another, by using a compressor and a circulating structure of liquid or gas refrigerant, through which heat is extracted from outside sources and pumped indoors..

## **Land Use**

The function of land and what it is used for. Land use varies from area to area. In rural areas (countryside) land use can include forestry and farming. In urban areas (towns and cities) land use could be housing or industry.

## **Landfill**

A common form of waste disposal, through burying in a landfill site.

## **Natural Green Infrastructure**

(also **Green Infrastructure**) – A strategically planned and delivered network of green spaces in an area which conserves wildlife, natural ecosystem values and functions, sustains clean water and air, and provides a wide array of benefits to people and wildlife. This includes parks, open spaces, woodlands, rivers, and allotments.

## **Net Zero Carbon**

The state where there is a balance between the amount of greenhouse gases released into the atmosphere by a human activity, and the amount which is removed. A commitment to net-zero carbon is associated with a commitment to reduce greenhouse gas emissions in order to achieve this balance.

## **Overheating (in buildings)**

A state where conditions in a building cause an accumulation of heat which can make occupants feel uncomfortable or heat stressed. The definition of “overheating” varies as it depends on local and regional climatic conditions. According to the World Health Organisation, ideally the room temperature should be kept below 32°C during the day and 24°C during the night.

## **Photovoltaics (or Photovoltaic Systems)**

Panels made of certain types of materials called semiconductors, such as silicon, which are used to collect solar energy and convert it directly into electricity.

## **Pocket Parks**

Small areas of inviting public green space where people can relax, exercise, socialise and play.

## **Rain Garden**

Rain gardens can be relatively small depressions in the ground that can act as infiltration points for roof water and other ‘clean’ surface water – i.e. water that is low in contamination levels. They can also be larger designed gardens, such as the Basildon Hospital Rain garden (see [page 6](#)), which are a publicly accessible green space, providing multiple benefits.

## **Renewable Energy**

Energy collected from renewable sources which are infinite and constantly replenished, e.g. solar energy and wind energy.

## **Resilience**

The capacity of a natural system to recover from disturbance.

## **Retrofit**

The addition of new components, technology, or features to a product or a system, to reduce carbon emissions and increase its efficiency.

## **Salt Marsh**

An area of low and flat coastal grassland between land and saltwater or brackish water, that is covered with grasses and grass like plants and is regularly flooded by seawater.

## **Soil Degradation**

Refers to a change in the soil health status, resulting in a diminished capacity of the ecosystem to provide goods and services for its beneficiaries.

## **Solar Farm**

A large-scale installation where photovoltaic panels are used to collect solar energy, which is a form of renewable energy. Solar energy is converted into electricity which feeds into the power grid for distribution to the consumers.

## **Sustainability**

A characteristic or state whereby the needs of the present and local population can be met without compromising the ability of future generations or populations in other locations to meet their needs.

## **Sustainable Drainage Systems**

Systems used to manage surface water that take account of water quantity (flooding), water quality (pollution) biodiversity (wildlife and plants) and amenity.

## **Sustainable Farming Practices**

See Sustainable Land Stewardship.

## **Sustainable Land Stewardship**

A range of farm systems and strategies applied to agriculture and land use, and have a positive environmental effect lowering global carbon emissions. Sustainable agricultural systems exhibit key attributes such as: Use of efficient crop and animal varieties; Limit external inputs; Exploit natural biological processes; Minimise physical and chemical technologies that have adverse impacts on the environment and human health; Use local human resources, and Lower use of valuable resources and production of damaging resources.

## **Walkable Neighbourhood**

A neighbourhood where active and sustainable ways of transportation, such as walking and cycling area increased and motor vehicle traffic reduced. The objective is to design neighbourhoods where all key facilities are within a 15-20-minute walk.

## **Water Scarcity**

Water scarcity is a relative concept. The amount of water that can be physically accessed varies as supply and demand changes. Water scarcity intensifies as demand increases and/or as water supply is affected by decreasing quantity or quality.

## **Wind Farm**

An installation of wind turbines in the same location, used to "harvest" wind energy turning this into electricity. Wind farms can be either onshore or offshore.

# Resource Links

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## Foreword

- [Net Zero: Making Essex Carbon Neutral](#)
- [Our four year, £200m climate action plan](#)

## A key year for Climate Action in the UK

- [Net Zero: Making Essex Carbon Neutral](#)
- [Glasgow Climate Pact and Paris Rulebook](#)
- [Sixth Assessment Report of the United Nation's Intergovernmental Panel on Climate Change](#)
- [Net Zero Strategy: Build Back Greener](#)
- [UK enshrines new target in law to slash emissions by 78% by 2035](#)
- [Progress in reducing emissions: 2022 Report to Parliament](#)
- [Sustainability and Climate Change Strategy](#)
- [Essex Climate Action Commission](#)

## 1. Land use and green infrastructure

- [Forest Research](#)
- [Natural England - Accessible Natural Green Space Standards in Towns and Cities: A Review and Toolkit for their Implementation \(ENRR526\)](#)
- [Essex Green Infrastructure Strategy 2020](#)
- [2020 UK Greenhouse Gas Emissions, Final Figures - ONS data](#)
- [Environment Agency - The state of the environment: soil](#)
- [The Path to Sustainable Farming: An Agricultural Transition Plan 2021 to 2024](#)
- [Nature Recovery Strategy policy paper](#)
- [25 Year Environment Plan policy paper](#)
- [The Essex Local Nature Partnership](#)
- [Water Resources East Regional Plan](#)

## 2. Energy

- [2020 UK Greenhouse Gas Emissions, Final Figures - ONS data](#)
- [Five Estuaries Offshore Wind Farm](#)
- [Guiding Principles for Solar Farms](#)
- [University of Essex - Reducing carbon emissions and our environmental impact](#)
- [Princess Alexandra Hospital - Harlow, Solar Panels](#)
- [Community Energy Colchester](#)
- [Sustainable Danbury](#)
- [Tollesbury Climate Partnership](#)
- [Saffron Walden Community Energy](#)

### **3. Built Environment**

- [Boiler Upgrade Scheme \(BUS\)](#)
- [EDF announces investment and partnership with Heat Pump installer, CB Heating](#)
- [EDF Energy - Zero Carbon](#)
- [Heat Pump Installer Network](#)
- [Energy Saving Trust - Sustainable Warmth Scheme Application Form](#)
- [Green Homes Grant Local Authority Delivery Scheme | Essex Climate Action Commission](#)
- [Braxted Park Estate](#)
- [Thurrock Rugby Football Club](#)
- [Delivering a net zero NHS](#)
- [Salix Finance - Mid and South Essex NHS Foundation Trust completes £30m energy upgrade project](#)
- [New homes to produce nearly a third less carbon](#)
- [The Essex Design Guide - Net Zero Carbon Viability and Toolkit Study](#)
- [The Essex Design Guide - Climate Change](#)
- [Housing Essex - Climate Action](#)

### **4. Transport**

- [2021-provisional-emissions-data-tables.xlsx](#)
- [Essex Rural Partnership resources](#)
- [Proportion of adults who cycle, by purpose, frequency, and local authority, England, November 2015 to November 2021](#)
- [Department for Transport statistics National Travel Survey](#)
- [Transport East - Transport Strategy July 2022](#)
- [Essex Highways - Enhanced Partnership Plan](#)
- [Essex.gov.uk - DigiGo service has expanded](#)
- [Essex Highways - Safer, Greener, Healthier Walking](#)
- [Essex.gov.uk - £1.3m to increase walking and cycling in Colchester](#)
- [Harwich and Manningtree Standard - Essex Pedal Power](#)
- [Vehicle licensing statistics data tables](#)
- [Electric vehicle charging devices by local authority](#)
- [Gazette News - E-scooter rides taken in Essex reach one million](#)

### **5. Waste**

- [Love Essex](#)
- [Freegle - Don't throw it away, give it away!](#)
- [Love Essex Fund Success Stories](#)
- [Pitsea School Uniform Bank](#)
- [Project Blueprint - Circular Economy Directory](#)
- [Essex Library of Things](#)

## **6. Community Engagement**

- [Essex Climate Action Commission](#)
- [Essex Climate Action Commission YouTube channel](#)
- [Facebook - Essex is Green](#)
- [Twitter - Essex is Green](#)
- [Instagram - Essex is Green](#)
- [Essex Climate Action Commission - Climate Action Advice packs](#)
- [Residents' Advice Pack](#)
- [Schools' Advice Pack](#)
- [Members of Parliament](#)
- [Friends of The Earth](#)
- [The Church of England](#)
- [Essex Women's Institute](#)
- [The University of Essex](#)
- [The Essex Wildlife Trust](#)
- [Anglian Water](#)
- [Business Advice Pack](#)
- [Climate Action Challenge Fund](#)
- [Climate Action Challenge Fund Recipients](#)

## **7. The Just Transition to a Green Economy**

- [Sector Development Strategy](#)
- [LGA and Ecuity Consulting 2021 - Local green jobs - accelerating a sustainable economic recovery](#)
- [Net Zero Innovation Network](#)
- [Provide](#)

## **8. The Essex Pathway to net zero**

- [LSE - Why is 'net-zero' so important in the fight against climate change?](#)
- [CCC, 2020 The Sixth carbon budget waste - climate change committee](#)





Environment and Climate Action

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