Essex Climate Action Commission

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https://www.essex.gov.uk/climate-action

Interim Report

Essex County Council

WORLD ECONOMIC FORUM – GLOBAL RISK REPORT 2020 "A PLANETARY EMERGENCY"

- Failure to act on Climate Change and associated impacts are the single biggest risk facing the World.
- Progress Report to Parliament, Committee on Climate Change, June 2020
- "We are not making adequate progress in preparing for climate change"
- The fundamental requirements to achieve Net Zero are largely unchanged by COVID-19: infrastructure investments and reskilling of workers – both of which can help the UK to recover from the COVID-19 crisis

Source: World Economic Forum, Global Risk Report (2020)

Essex Climate Action Commission

- Cross-party group over 30 Commisisoners

- Brings together experts from Academia, Climate Scientists, the Public Sector and Business Leaders, trade associations, charities and academics, including UN Chief Scientific Adviser & senior academics from all 3 Essex Universities.

- Appointed Independent Chair – Lord Randall of Uxbridge

  - Identified for his significant experience in both national government and the private sector.
  - Life peer in the House of Lords.
  - Was Special Advisor on the Environment to the former Prime Minister, Theresa May
  - served as a trustee of the RSPB
  - special envoy on modern slavery to the Mayor of London
  - member of the Environment, Transport and Regional Affairs Select Committee

- Appointed two Young Essex Assembly members to the Commission as co-chairs

https://www.essex.gov.uk/climate-action

ECAC Roadmap to 2050

Recommendations Shape a Road map to net zero

2021

EV strategy; E-Scooter Pilots running ; Ten Low traffic Neighbourhoods

community owned renewables

Essex Design Guide; Green construction training

Smart meters in schools

All new builds to have solar panels

2022

New schools commissioned net zero

25 school streets

10 local delivery hubs

5 E-cargo bike schemes

Green procurement in construction

Energy sector innovation hub

2023

Essex Housing Demonstrator net zero development

Developers to fund flood risk management via CIL

Coastal flood resilience scheme in critical areas completed

2024

Network community reuse and repair hubs

2025

All New buildings net zero and support circular economy recycling

50% Essex schools retrofitted to net zero

All residents & businesses to have kerbside recycling

All biodegradable waste to beneficial use

2030

All anchor estates Net Zero

100% fuel poor homes retrofitted & supplied with renewables

2/3 Essex houses retrofitted

GHG emission from housing halved

1/3 commercial buildings retrofitted

100% schools retrofitted

All new buildings carbon positive

2030

25% land natural green infrastructure (urban and rural)

50% farmland uses sustainable land stewardship

30% Essex in a Climate Focus Area

Per capita waste reduced by 10%

70% recycling rate

Zero waste to landfill

2030

25% roofs have solar panels

1.43GW solar energy

Bioenergy in difficult rural homes

Hydrogen store for renewable energy

20 Low Traffic Neighbourhoods

3 new park and choose sites

2035

All waste heat reused

All gas fired power repurposed to bioenergy

Network of community energy neighbourhoods in every district

2040

All housing retrofitted

Zero GHG emissions from housing

Essex renewables meets all county needs

30% all land natural green infrastructure

75% farm land adopts sustainable land practises

2050

All roofs have solar panels

75% all developments have integrated natural water management

100% farm land uses sustainable land practises

Climate Challenge

UK Domestic Green House Gas Emissions (GHG) by Sector 2019

Source: BEIS, HMG

Others include Public, Industrial Processes and the Land Use, Land Use Change and Forestry (LULUCF) sectors. The percentages may not sum to 100% due to rounding.

Final UK greenhouse gas emissions national statistics: 1990 to 2019 - GOV.UK (www.gov.uk)

We are legally required to achieve net zero green house gas emissions by 2050 (Climate Change Act 2008).

In 2019, UK territorial greenhouse gas emissions fell by 3% from 2018 and were 44% lower than in 1990

Energy supply delivered the largest reduction in emissions in the UK from 2018 to 2019, as power stations continued to reduce coal use

THE CLIMATE HAS ALREADY CHANGED – TEMPERATURE AND SEA LEVEL ARE ALREADY RISING

What has happened so far?

Global average surface temperature is more than 1° C above pre-industrial levels.

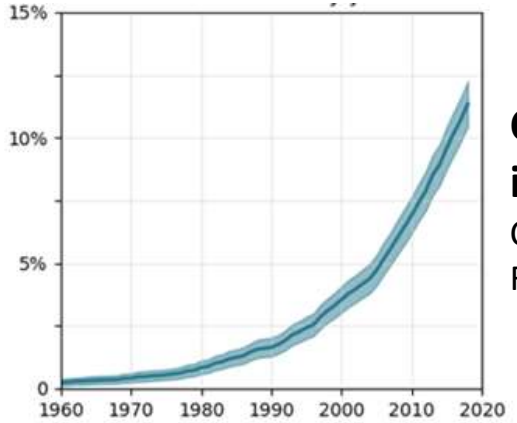
UK annual average temperature is about 1.2° C above pre-industrial levels. We have experienced a 0.8° C increase since 1961-1990.

Global mean sea level has risen ~21cm from 1900.

UK mean sea level has risen ~16cm from 1900.

There are some indications of **increasing heavy rainfall** in the UK, though difficult to quantify.

Increasing chance of UK heatwaves "like 2018 summer". Now 10-25% chance each year, compared to <10% chance a few decades ago.

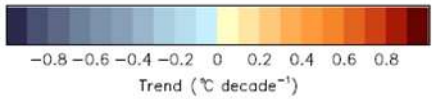


Chance of a UK "2018 Summer" increasing annually since 1960.

Chance >2018 by year
From the Met Office 'UNSEEN' project

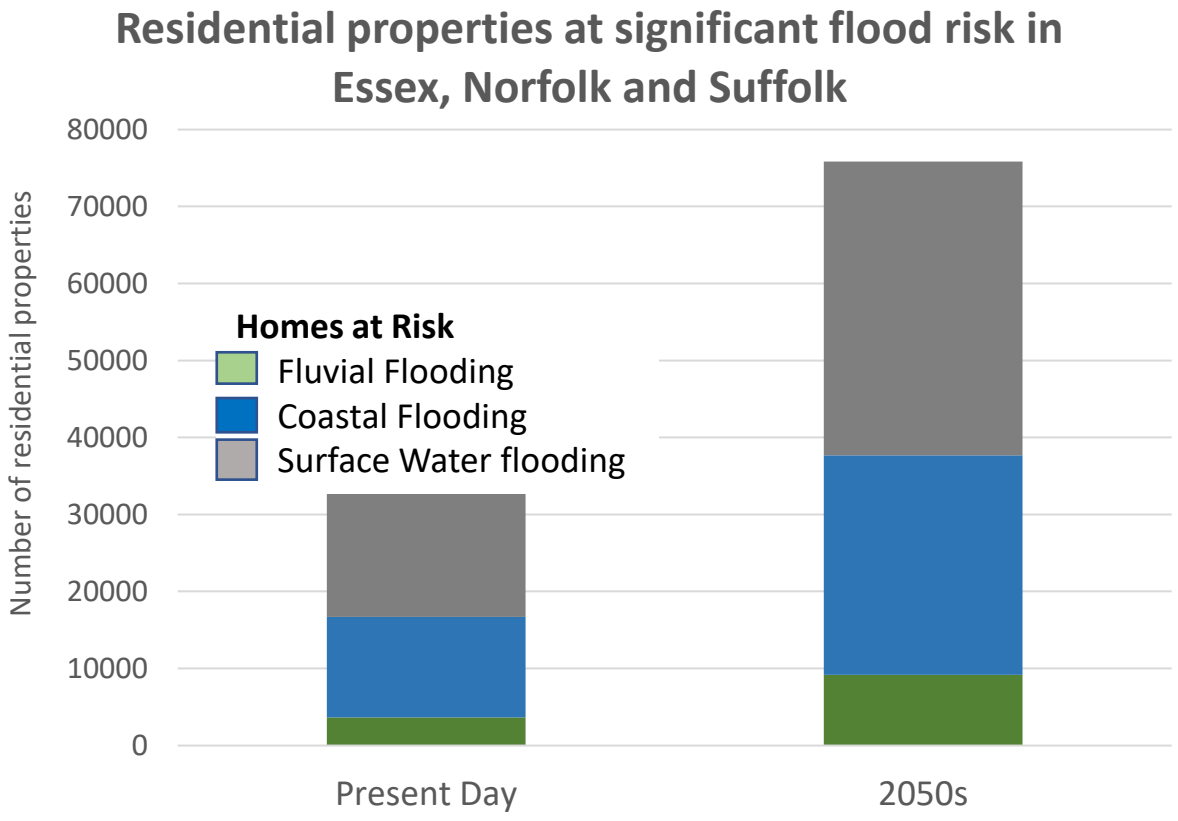
Trend in the warmest day since 1960.

1960-2019 observed trends
Christidis et al. (2020)



https://www.theccc.org.uk/2020/04/21/how-much-more-climate-change-is-inevitable-for-the-uk/, https://www.nature.com/articles/s41467-020-16834-0

FUTURE IMPACTS: WATER - INCREASED FLOOD RISK



Sayers et al. 2017 (CCRA2)

The Environment Agency estimate that for every £1 spent improving protection from flooding and coastal erosion, we avoid around £5 of property damages

Flooding, and managing it, cost the UK around £2.2 billion each year:
Nationally we currently spend around £800 million per annum on flood and coastal defences; and, even with the present flood defences, we
experience an average of £1,400 million of damage. While the level of spending is fairly steady, damage due to flooding is intermittent and can be huge when a major flood occurs.

Flood defences protect not only people and private properties, but also **vital amenities** and public assets, including hospitals, the emergency services, schools, municipal buildings and the transport infrastructure. Disruption of these by flooding can have **major knock-on effects for business and society**

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/300332/04-947-flooding-summary.pdf

FUTURE IMPACTS: WATER - INCREASED WATER SCARCITY

Essex also has substantial issues with water scarcity and is one of the areas of the country with the highest levels of negative available water resource as a % of water available for abstraction in the country.

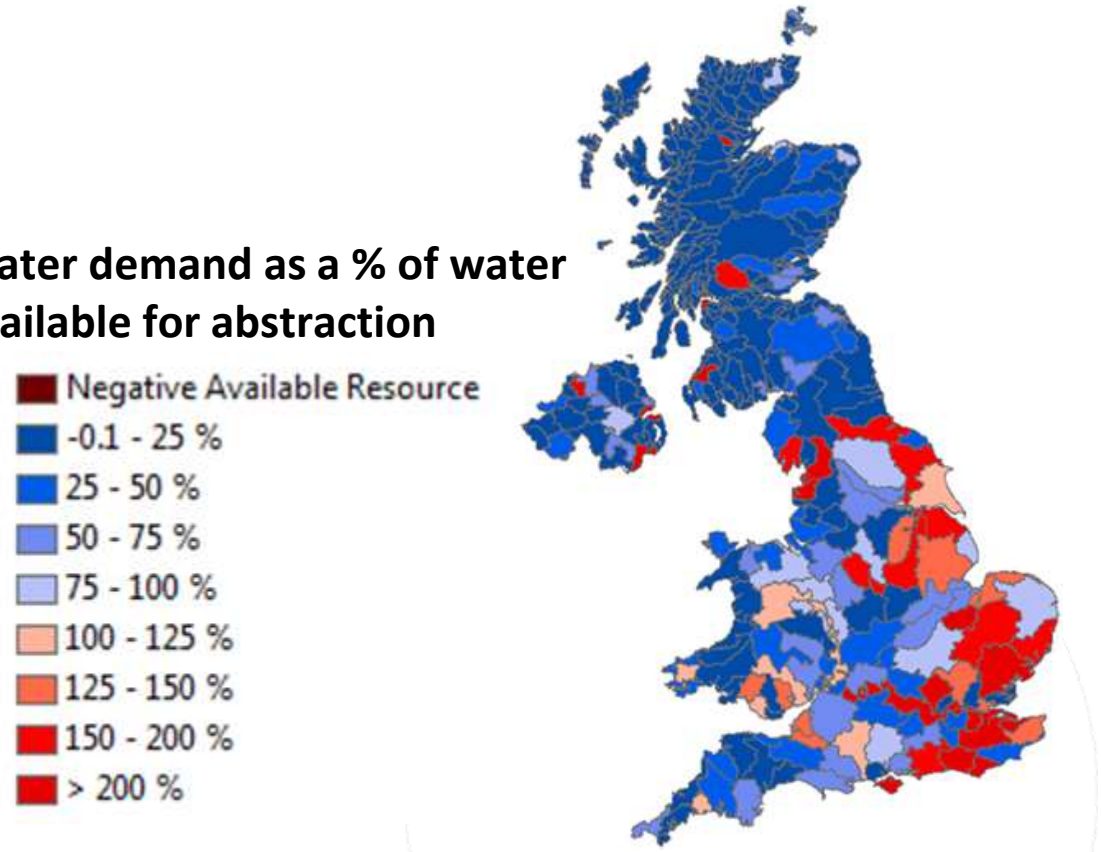
A recent study of Water scarcity in the Anglian River Basin catchment identified very high pressure areas in North Essex where we are consistently consuming more water than is available on an annual basis

Climate change risks are being recognised by the water companies in and their customers:

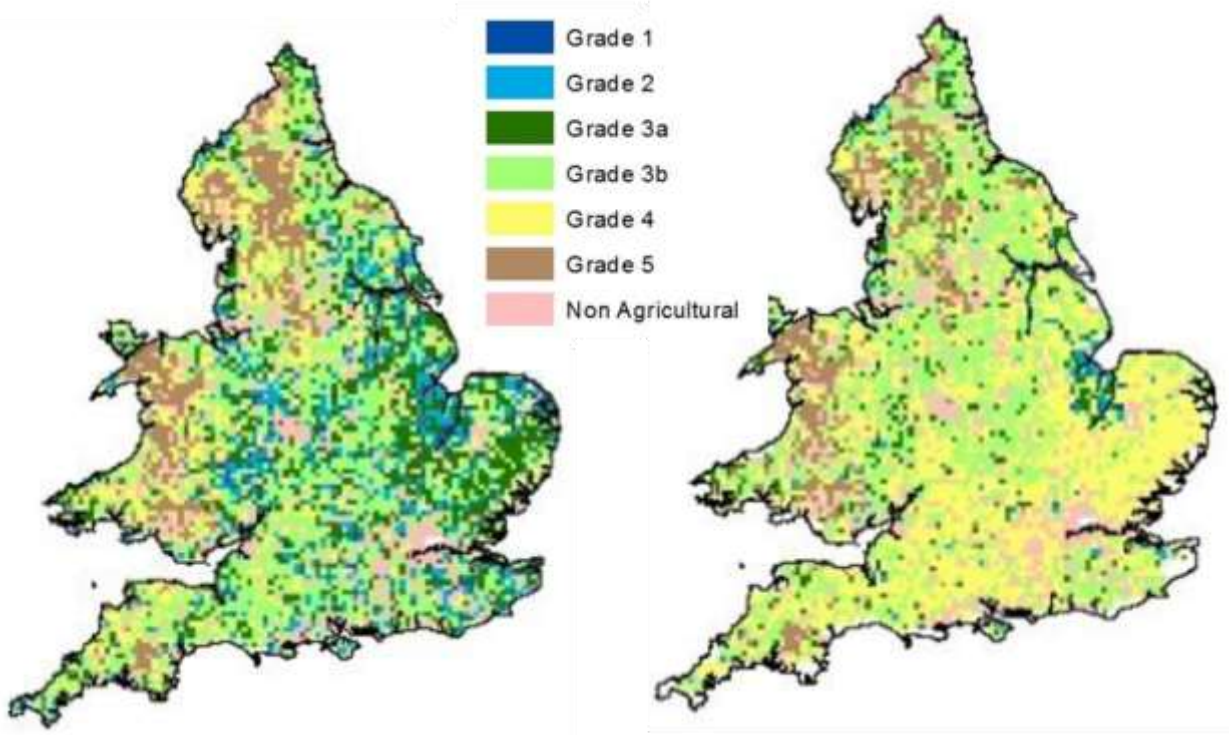
"**Customers want us to invest now to address climate change risks** and improve resilience rather than defer and are **prepared to see bills increase by up to 5%** in return for investment to address these risks.

…we will face ever growing pressures from climate change and population growth, areas where we are more exposed than other companies given our region is already water-scarce. To ensure we remain resilient to these pressures, we will need to **deliver significant increases in investment in new infrastructure**, deploy sufficient capital maintenance expenditure to safeguard existing assets, and deliver ongoing investment in our people."
(Anglian Water, 2019)

Water demand as a % of water available for abstraction



AGRICULTURAL LAND CLASSIFICATION IN ENGLAND AND WALES



Baseline (1961-91)

2050s (high emissions scenario)

FUTURE IMPACTS – AGRICULTURE AND SOILS

Climate change will cause soil erosion, leading to degradation of our agricultural land and impacting our farming economy.

	Km²	%
Total Area of Productive Spaces (e.g. Agricultural land)	2,240	61%
Total Area of all other Green Infrastructure	782	21%
Remaining land (e.g. Built up areas)	655	18%
Total Land area in Greater Essex	**3,677**	**100%**

In Essex Agriculture, Forestry & Fishing employs c5,000 people in 2,270 enterprises (2018)

From Defra (2015), see UK CCRA 2017 – Chapter 3: Natural environment

CLIMATE COMMISSION
LAND USE, GREEN INFRASTRUCTURE, RESILIENCE

LAND USE

Sustainable Land Stewardship practices in agriculture 50 % by 2030; 75% by 2040 and 100% by 2050

BIODIVERSITY

30% of all Land in Essex to be Natural Green Infrastructure by30% by 2040

URBAN GREENING

30% greening of urban space to be green space/ infrastructure

COASTAL FLOODING

Acknowledge scale of future coastal change and communicate this to residents

COASTAL FLOODING

Develop action plans to manage and adapt specific shorelines

RESILIENT PUBLIC SECTOR

Develop nature based adaptation plans for care homes, hospitals, schools, prisons

WATER EFFICIENCY

Include water efficiency measures in energy efficiency retrofit programmes

CLIMATE RISKS

Disclose physical risks: Taskforce on Climate-related Financial Disclosure, or the Adaptation Reporting Power

SUSTAINABNL:E DRAINAGE

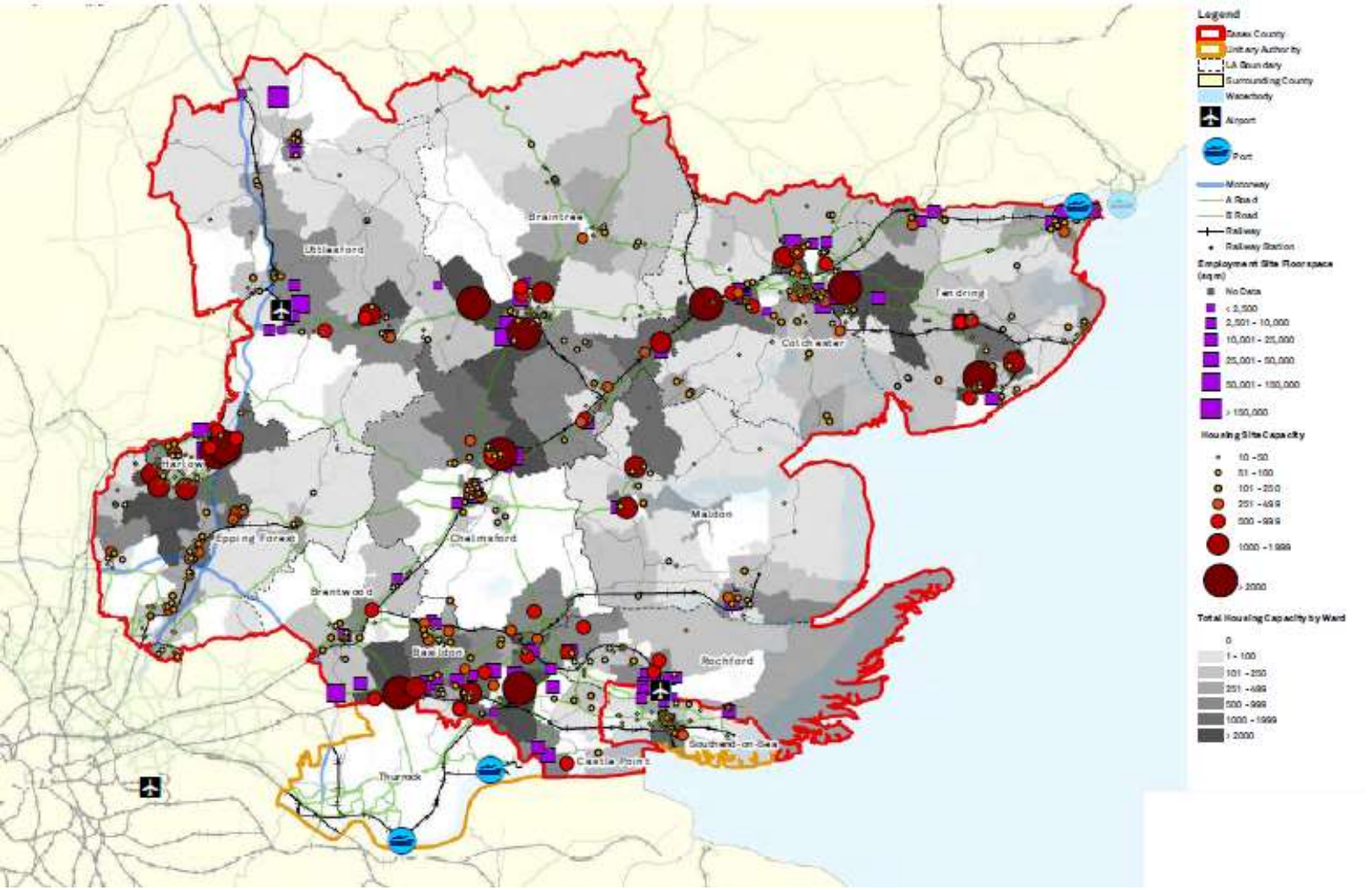
Make SUDS default for new developments

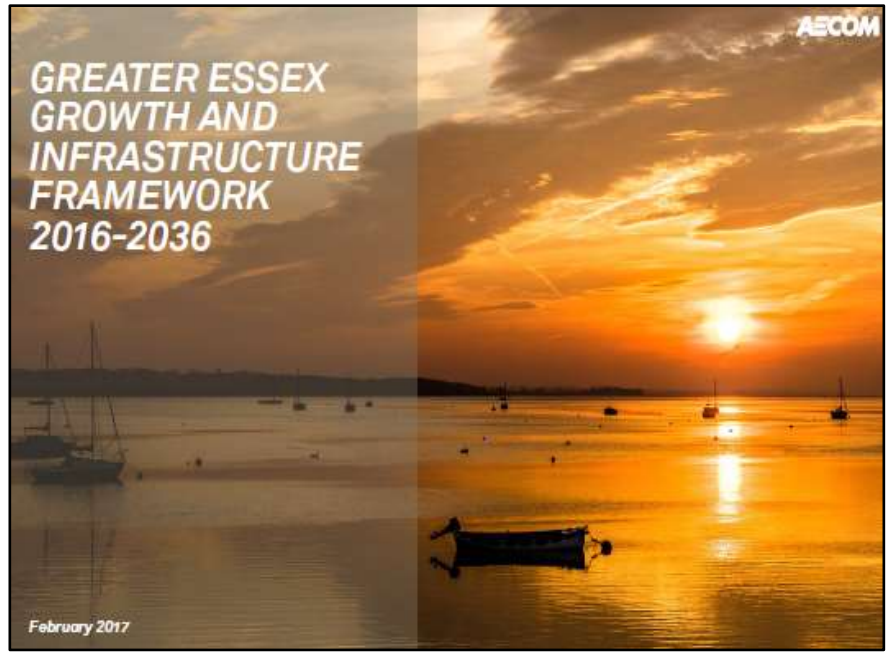
FLOODING

¾ of flood resilience schemes to be nature based by 2050

THE SCALE OF GROWTH PLANNED FOR ESSEX TO 2036:

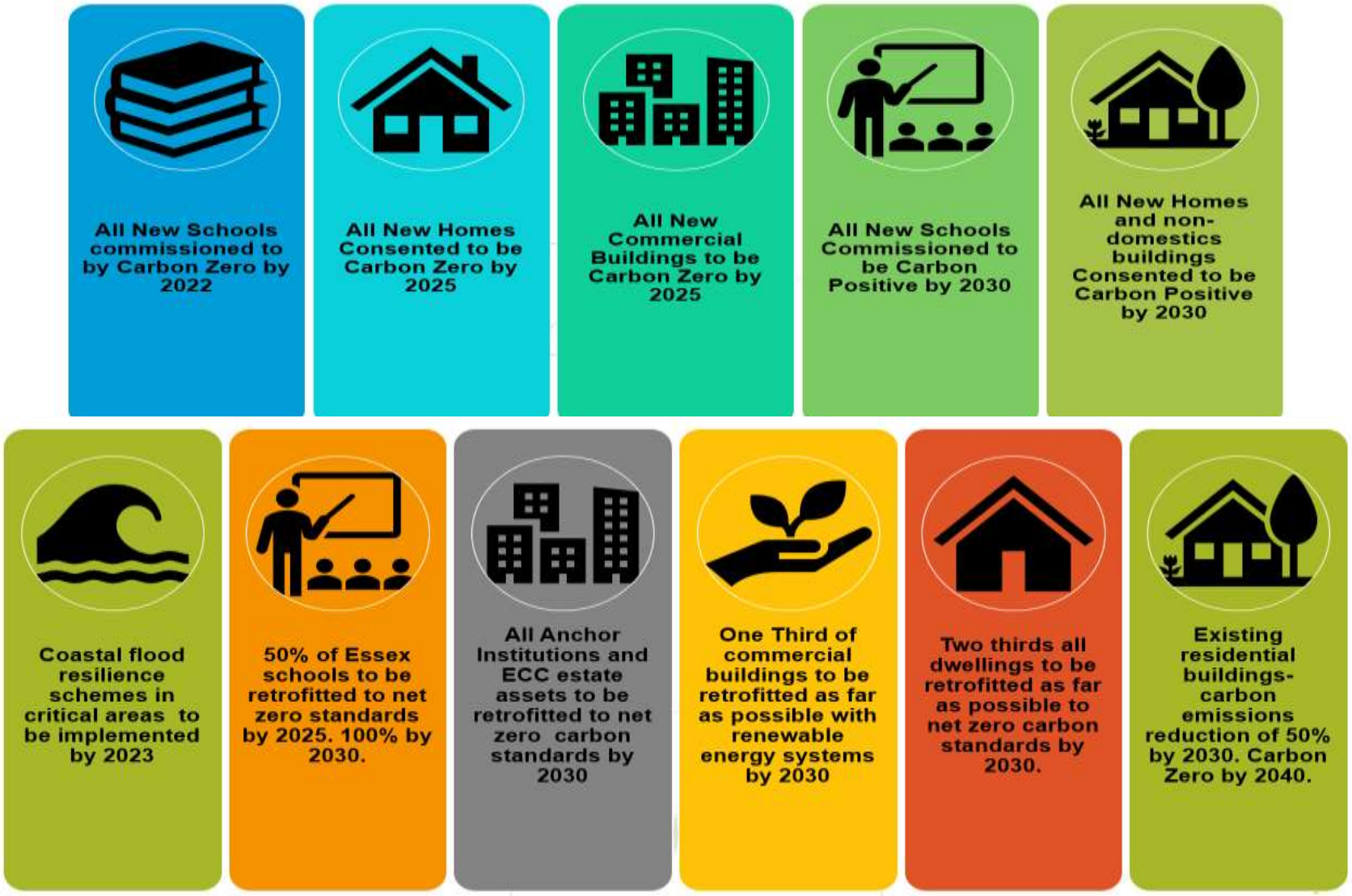
180,000 New Homes – 40 -50 new schools.



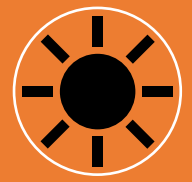


Source: Greater Essex Growth and Infrastructure Framework (2017)

CLIMATE COMMISSION: BUILT ENVIRONMENT



CLIMATE COMMISSION
ENERGY & WASTE



Solar Panels on Roofs

Install Solar panels on every roof l by 2050 - 25% of rooftops by 2030.

Large Scale Solar

Build 1.43 GW of large scale solar on available land by 2030.

Renewable Revolution

Essex self sufficient in renewable energy by 2040,

No Waste Heat

All waste heat to be captured and reused (where local demand exists) by 2035.

Hydrogen

Create facilities to produce green hydrogen to fuel heavy good vehicles by 2040.

Community Energy

Build a network of community energy neighbourhoods by 2035.

Recycling

Accelerate recycling activity to achieve a minimum 70% recycling rate by 2030

Recycling

All Essex residents and businesses to have access to kerbside recycling services by 2025

Green Procurement

Evaluate emission impacts in all procurement decisions

Waste Innovation Fund

plastic substitution opportunities, and enhancing local reprocessing capacity

Behaviour change

Establish a network of community-based reuse and repair hubs in Essex by 2024.

CLIMATE COMMISSION TRANSPORT

Increase Active Travel

Building cycling & walking infrastructure

Increase low traffic neighbourhoods

20 LTNs per annum to 2030

Introduce school streets

25 schools by 2022, and an additional 20 per year to 2050

Expand Park & Choose

3 new Park & Choose (pedal, scoot, strike) sites by 2030

Rebuild Public Transport

Invest in bus recovery

Trial e-bikes / e-scooters

6 pilot schemes across the county by the end of 2020

Discourage unnecessary car use

Parking charging

Road User Chargng

Expand EV charging network

Deliver a detailed EV strategy

First/last mile delivery

e-cargo bike pilots in five locations by 2022, leading to wider introduction through 2030

Pilot local delivery hubs

Introduce 10 local delivery hubs by 2022

Behaviour change

Develop behaviour change strategy and campaign

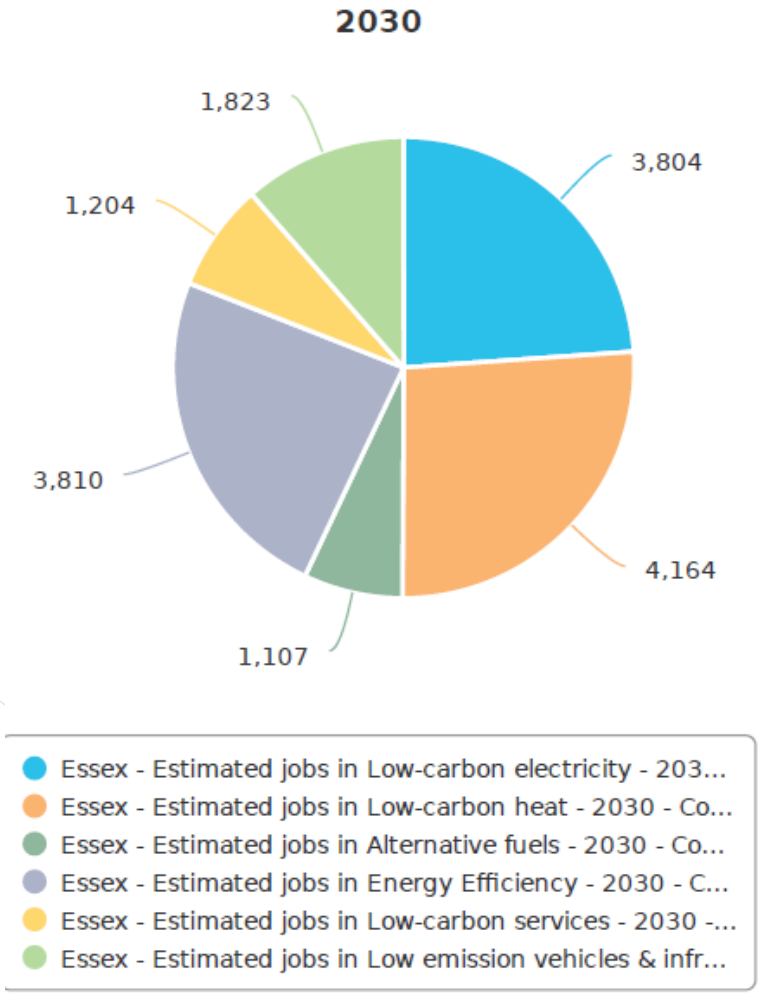
THE GREEN ECONOMY – CHALLENGE & OPPORTUNITY

- 25m homes in UK need to decarbonize, 833,000 pa to meet the net zero challenge by 2050.
- 12.4m homes in Wider South East are connected to the Gas Grid, though 1.9m not.
- **BUT**
  - Sustainable construction sector is estimated to be worth £400bn rising to £1000bn
  - Will create 1.8m new jobs. 0.5m in Wider South East.

Source: The Greater South East Energy Hub (2020)

GREEN JOBS: ENERGY ACCELERATING SUSTAINABLE ECONOMIC-RECOVERY

- In 2018 there were 185,000 full-time workers in England's low-carbon and renewable energy economy (ONS).
- LGA forecast that in 2030 across England there could be as many as **694,000** direct jobs employed in the low-carbon and renewable energy economy, rising to over **1.18 million by 2050.** In Essex it is estimated that 15,908 jobs will be required by 2030 and 27,741 by 2050.
- Government's Build Back Better promises to invest in net zero to create new opportunities for economic growth and jobs across the country, including supporting up to 60,000 jobs in the offshore wind sector, 50,000 jobs in carbon capture, usage and storage (CCUS) and up to 8,000 in hydrogen in our industrial clusters.



https://www.local.gov.uk/local-green-jobs-accelerating-sustainable-economic-recovery

MOVE TO A CIRCULAR ECONOMY: WASTE

Widespread adoption of circular business models across the UK had the potential to deliver:

- over £75 billion in Gross Value Added;
- over 21 million tonnes in material savings;
- over 38 million tonnes of waste diverted from landfill; and
- over 15 million tonnes of greenhouse gas reductions per year.

WRAP: How moving to a Circular Economy can help the UK to Build Back Better

Essex Climate Action Commission

20th July : Essex Climate Action Report Launch

2021-2022: Focus on Green Growth, Green Finance and Delivery Against Recommendations

Essex County Council Leader of Essex County Council, Cllr Kevin Bentley

Our ambition is to reach for the stars – we want to be the best County Council in the country, offering the best services and value-for-money to residents.

There is no better example of this than our ambition to meet our climate change targets before 2050

Essex Climate Action Commission

Powering positive change