CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY

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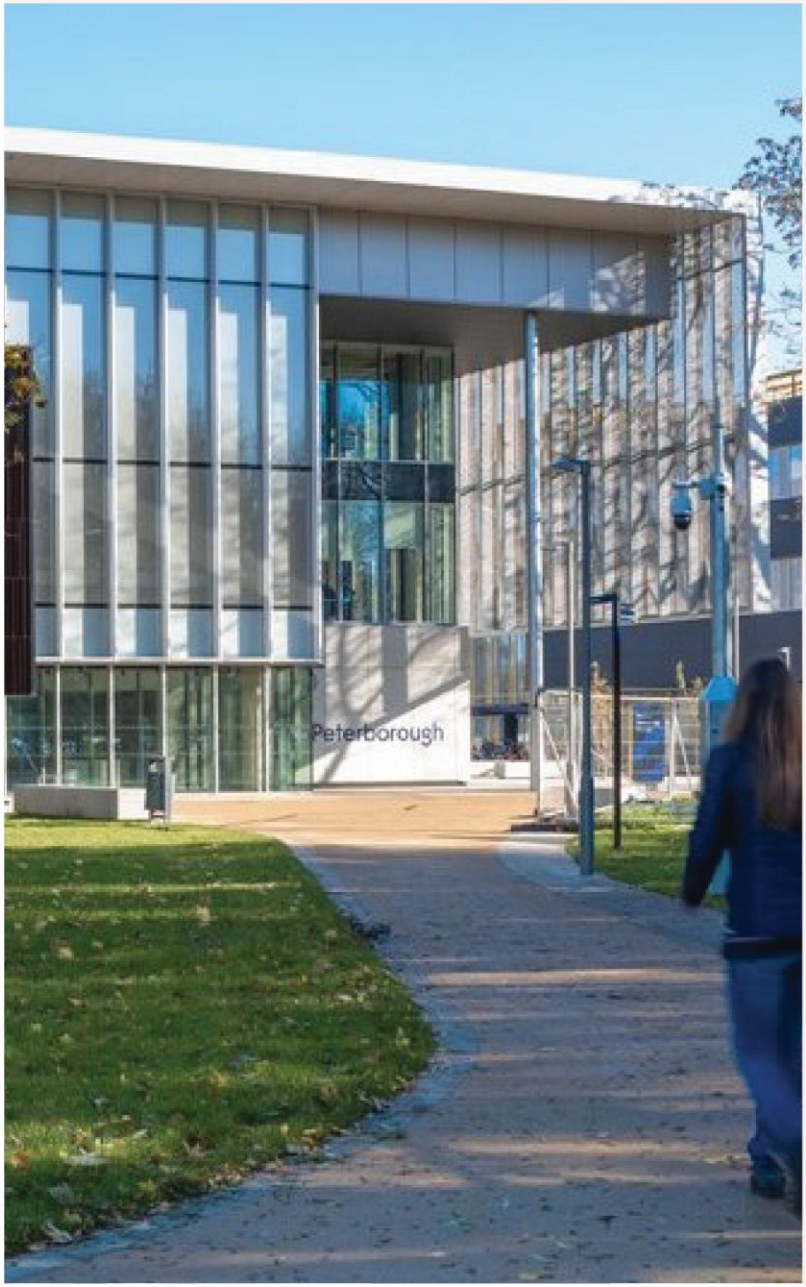
Net Zero & Climate Resilience

State of the Region 2025



State of the Region Overview

The Cambridgeshire and Peterborough State of the Region 2025 provides a comprehensive, evidence-based assessment of Cambridgeshire and Peterborough's current economic, social, and environmental landscape. By analysing the most up-to-date data and insights from across the region, this report serves as a resource and evidence base for stakeholders, policymakers, and community leaders to understand the area's opportunities, priorities, and pathways for growth and prosperity.

The comprehensive analysis was structured with more than 140 distinct indicators across eight key themes. The resulting holistic approach reflects stakeholders' commitment to capturing a detailed and nuanced picture of the C&P region's current status and future prospects. The themes and data were selected and refined through a process of continuous engagement with core stakeholders, ensuring they resonate with local priorities that leveraged relevant data sources.

An interactive publicly accessible data portal containing all the raw data, with interactive charts and maps can be opened from this website link State of The Region Data Portal.

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Net Zero & Climate Resilience

This chapter explores net zero and climate resilience through the sub-themes of greenhouse gas emissions, energy efficiency, waste and circular economy, and climate resilience. It identifies that tangible emissions reductions have been made across the region, whilst setting out challenges such as the decarbonisation of buildings and increasing environmental risks.

Carbon dioxide equivalent emissions per square kilometre[1] decreased since 2015, reaching 2.24 kt CO_2e/km^2 by 2022 in the C&P region, slightly above the English rate of 2.19 kt CO_2e/km^2. Notably, C&P had the lowest carbon dioxide equivalent emissions per square kilometre among the combined authority peers. However, the region's emissions reduction rate of 10.8% between 2015 to 2022 lagged behind the combined authority peers, which each achieved between 20.4% and 23.2% reductions.

Greenhouse gas emissions per capita[2] in C&P were significantly higher than for England in 2022, at 8.38 tCO_2e per person compared to England's 5.09 tCO_2e. A key reason for this was due to C&P's extremely high share of emissions from land use, land-use change, and forestry (LULUCF)[3] that presents a rather unique challenge. While England as a whole generated net negative emissions in LULUCF owing to sequestration in forestland and grassland, C&P had a significant 20.9% of its total emissions coming from this sector.

Energy efficiency in the region experienced mixed results. While energy consumption per square kilometre[4] did not generally decrease from 2011, the proportion of Energy Performance Certificates (EPCs) rated C or higher[5] was 70.2% in 2024, surpassing the English rate of 63.4%. Renewable energy capacity grew significantly, with Solar PV capacity[6] more than doubling between 2014 and 2023, representing 5.1% of England's total capacity in 2023. The region generated 1,620,000 MWh of renewable energy[7] that contributed 1.8% to England's total renewable energy generation in 2023.

In 2023-24, the recycling rate[8] in C&P was 48.2% of all local authority collected waste (household and non-household), up from 47.4% in the previous year. However, there were variations within the C&P area since East Cambridgeshire had the highest recycling rate at 53.6%, whilst Fenland had the lowest rate at 38.4%.

Climate resilience is important for the region. C&P experienced an annual average of 12.2 days with 10mm or more of rainfall[9] and 0.4 extreme summer days exceeding 35°C[10]. Flood risk is significant, with 37% of the region's land at risk of flooding from rivers and the sea[11], primarily due to low topography.

[1] DESNZ, 2024. UK local authority and regional greenhouse gas emissions statistics. [Link to source]
[2] DESNZ, 2024. UK local authority and regional greenhouse gas emissions statistics. [Link to source]
[3] DESNZ, 2024. UK local authority and regional greenhouse gas emissions statistics. [Link to source]
[4] DESNZ, 2024. Total final energy consumption at regional and local authority level. [Link to source]
[5] DLUHC, 2025. Live tables on Energy Performance of Buildings Certificates. [Link to source]
[6] DESNZ, 2024. UK local authority and regional greenhouse gas emissions statistics. [Link to source]
[7] DESNZ, 2024. UK local authority and regional greenhouse gas emissions statistics. [Link to source]
[8] DEFRA, 2024. Local authority collected waste management - annual results. [Link to source]
[9] Met Office, 2024. Annual Count of 10mm Rainfall Days 1991 - 2020. [Link to source]
[10] Met Office, 2024. Annual Count of Extreme Summer Days - Projections (12km). [Link to source]
[11] Environment Agency, 2024. Risk of Flooding from Rivers and Sea. [Link to source]

Summary of key findings

Metric	Section	Findings
Carbon Dioxide Equivalent Emissions	1.1	• By 2022, carbon dioxide equivalent emissions per square kilometre in C&P declined to 2.2 kt CO_2e/km^2 from 2.5 in 2015.
Carbon Dioxide Emissions Forecast	1.2	• Under a do-nothing scenario, by 2045, all local authority areas in C&P would experience an increase in emissions. • Cambridge is forecast to have the largest increase at 13% whereas Huntingdonshire is forecast to have the lowest increase at 1%.
Emissions Intensity Ratio	1.3	• All areas across the C&P region had a decrease in their emissions intensity ratios (measured as emissions per £m GVA) across the past 18 years to 2022; however, five out of C&P's six local authority areas had emissions intensity ratios above England's (0.15 kt CO2e/£m GVA) in 2022.
Greenhouse Gas Emissions per Capita	1.4	• In 2022, emissions per capita in C&P was 8.4 tCO2e per person compared to England's 5.1 tCO2e per person. • Apart from the denser urban areas of Cambridge and Peterborough, all the remaining C&P areas emitted more than the average 5.1 tCO2e per person in England.
Greenhouse Gas Emissions by Sector	1.5	• C&P's extremely high share of emissions from LULUCF is notable and a rather unique challenge for the region. • While England generated zero emissions in LULUCF owing to sequestration in forestland and grassland, C&P had a significant 20.9% of its total emissions coming from the LULUCF sector in 2022.
Energy Consumption	2.1	• Overall, energy consumption per square kilometre across the C&P region either increased or decreased only slightly since 2011. • Cambridge had the highest energy consumption per square kilometre at 4.85 $ktoe/km^2$ in 2022. • East Cambridgeshire had the lowest energy use per square kilometre at 0.31 $ktoe/km^2$.
Energy Performance Certificate Registrations C+ (Domestic)	2.2	• Within the C&P region, the proportion of EPCs grade C or above was 70.2% in 2024, which was higher than England's rate of 63.4%.
Renewable (Solar PV) Capacity	2.3	• Solar PV capacity more than doubled in the C&P region since 2014, reaching a 192.9% increase in 2023. • Solar PV Capacity in the region made up 5.1% of the total capacity in England.
Renewable Energy Generation	2.4	• Total renewable generation within the C&P region was 1,620,000 MWh in 2023, which was 1.8% of England's total.
Waste Produced	3.1	• East Cambridgeshire had the largest increase between 2015-16 and 2023-24, at 3.8%, reaching 33,500 tonnes of waste produced in 2023-24. • All local areas had an increase in waste produced in the latest year-on-year period between 2022-23 and 2023-24.

Waste Recycled	3.2	• The C&P region had a local authority collected waste (household and non-household) recycling rate of 48.2% in 2023-24, an increase from the recycling rate of 47.4% the previous year. • In 2023-24, East Cambridgeshire had the highest recycling rate at 53.6%, whilst Fenland had the lowest rate at 38.4% followed by Peterborough at 41.4%.
Waste per Person	3.3	• In 2023-24, the waste per person ranged between 330kg and 400kg across C&P's areas. • Fenland had the highest rate of waste per person (400kg). • However, Fenland was the only local area in C&P that had a reduction in its waste per person in 2023-24, dropping by 4kg of waste per person from the previous year.
Waste Landfilled	3.4	• East Cambridgeshire had 15,500 tonnes of waste that was not recycled, reused or composted, the lowest absolute amount across all the C&P region. • Fenland was the only local area that had a reduction in the tonnage of waste produced that was not recycled, reused or composted in 2023-24, recording a 3.1% decline from the previous year.
Extreme Weather Days	4.1	• The C&P region had an annual median number of extreme summer days across the recent 20-year period at 0.4 days and 12.2 days annually with over 10mm of rainfall.
Flooding Risk	4.2	• Across the C&P region, 37% of land is at risk of flooding from rivers and the sea.

1 Greenhouse Gas Emissions

1.1 Carbon Dioxide Equivalent Emissions

This indicator describes the total amount of greenhouse gases (carbon dioxide, CO_2, methane, CH_4, and nitrous oxide, N_2O) released within a local authority area as a ratio of the total land area within the corresponding local authority area[12]. The data contained territorial emissions, which means that only emissions occurring within the UK's borders were included. Energy emissions were assigned on an end-user basis, where emissions were allocated at the point of consumption. Emissions of each greenhouse gas were weighted by their relevant global warming potential (GWP), to account for all gases in standard Carbon Equivalent (CO_2e) units. Fluorinated greenhouse gases (hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride and nitrogen trifluoride) account for around 3% of greenhouse gas emissions; however, these gases were not included in this dataset since these emissions cannot be estimated at a local authority level. Note that these omitted gases may often be associated with high GWP and thus contribute more strongly to warming than CO_2.

Combined Authority Comparators

Figure 1-1 plots the kt CO_2e emissions per square kilometre for the C&P region and the combined authority areas in the peer group between 2015 and 2022. It should be noted that using emissions per square kilometre as a comparator can affect smaller, densely populated areas such as Cambridge City (approximately 40km^2). Higher values may reflect density and concentrated urban activity rather than inefficiency. Comparisons with larger authorities should be acknowledged with this context. Overall, emissions per square kilometre decreased steadily in all the areas. Emissions per square kilometre for the C&P region largely tracked the England rate (2.2 kt CO_2e per km^2 in 2022) and were the lowest of the combined authority areas. West Yorkshire Combined Authority (WYCA) area had the highest rate at 5.2, then the South Yorkshire Combined Authority (SYCA) area at 4.5 and lastly, the West of England Combined Authority (WECA) area with a rate of 3.5 in 2022. It is important to note that the C&P region is unique amongst the combined authority areas in the peer group, having a much greater proportion of rural residents and a much larger overall area. However, while having the lowest overall emissions per square kilometre within the combined authority peer group, the C&P region had the smallest percentage reduction from 2015 to 2022. C&P had a reduction in emissions by 10.8% from 2015 to 2022, while the other three combined authority areas all had reduced emissions by ~20-23%. Nationally, the reduction in emissions per square kilometre for England during this period was 21.8%, or by 0.6 kt CO_2e per km^2. This was twice the total reduction in emissions for the C&P region, which was 0.3 kt CO_2e per km^2.

[12] DESNZ, 2024. UK local authority and regional greenhouse gas emissions statistics. [Link to source]

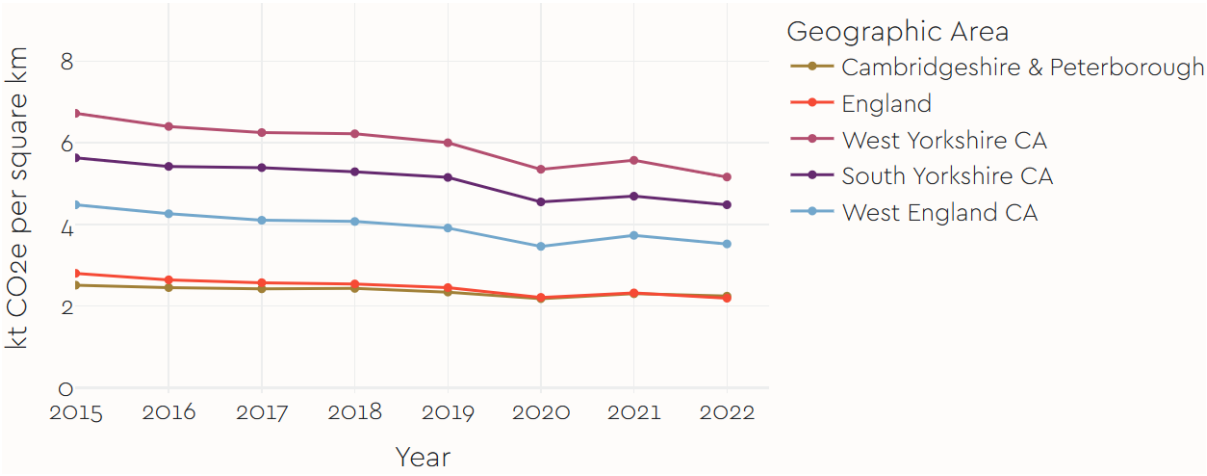


Figure 1-1: Greenhouse Gas Emissions (kt CO_2e per km^2) by Combined Authority area & England and by Year

Local Authority Comparison

Figure 1-2 plots the kt CO_2e emissions per square kilometre for the C&P region between 2005 and 2022, by local authority area. Emissions per square kilometre overall across this period were highest in Cambridge and were 13.3 ktCO_2e/km^2 in 2022, which was almost four times higher than in Peterborough (at 3.4 ktCO_2e/km^2). This finding suggests that higher emissions in Cambridge were not just a function of urban density. Kt CO_2e emissions per square kilometre in the remaining local authority areas ranged from 1.4 kt CO_2e/km^2 in South Cambridgeshire to 2.7 kt CO_2e/km^2 in Fenland, in the latest data covering 2022.

Emissions per square kilometre declined throughout the C&P region since 2005. The decrease in emissions per square kilometre across the region was most pronounced in Cambridge, which observed a 44.7% decrease between 2005 and 2022, marginally greater than England as a whole, where emissions dropped 42.8% over the same period. However, the reduction in carbon emissions per square kilometre was slower in other areas of the C&P region, ranging between a 17.1% and 37.7% decrease. These reductions can largely be associated with the wider trend in decarbonisation of the UK National Grid, improved performance of the building stock, and an increase in local renewable capacity.

Perhaps unsurprisingly, all local authority areas in the C&P region had a slight increase in emissions per square kilometre in 2021, likely owing to the economic recovery after the COVID-19 pandemic. Nevertheless, all the C&P local authority areas had a subsequent decline in the next year of 2022.

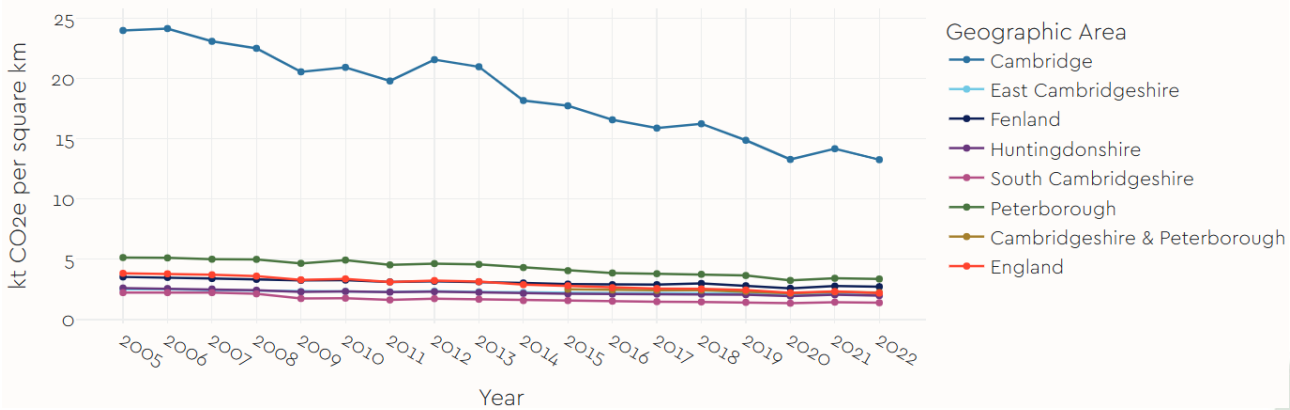


Figure 1-2: Greenhouse Gas Emissions (per kt CO_2e per km^2) by Local Authority area & England and by Year

1.2 Carbon Dioxide Emissions Forecast

The East of England Forecasting Model (EEFM) incorporated a forecast of annual CO_2 emissions within each of C&P's local authority areas up to and including 2045[13]. Annual growth factors were calculated from the forecast values, which were applied to determine a greenhouse gas emissions forecast using the 2021 value as a base. The emissions were constructed on a per square kilometre basis to allow for comparison between locations. The EEFM forecast was based on extrapolating historical trends and emissions intensities, though it did not consider policy commitments (e.g. a net zero commitment) or technological advancements. The EEFM was last updated in 2019, while the baseline emissions data used are from 2021 (published in 2023). The forecast should therefore be viewed as a do-nothing scenario emissions forecast. Figure 1-3 plots the forecast of greenhouse gas emissions per square kilometre, for the period 2024 to 2045. It shows that under a do-nothing scenario, by 2045, all local authority areas in C&P would experience an increase in emissions. Cambridge would have the largest increase, at 13% compared to 2021, building on its already substantially greater emissions than the other local authority areas. Whereas Huntingdonshire would have the lowest increase, at 1%.

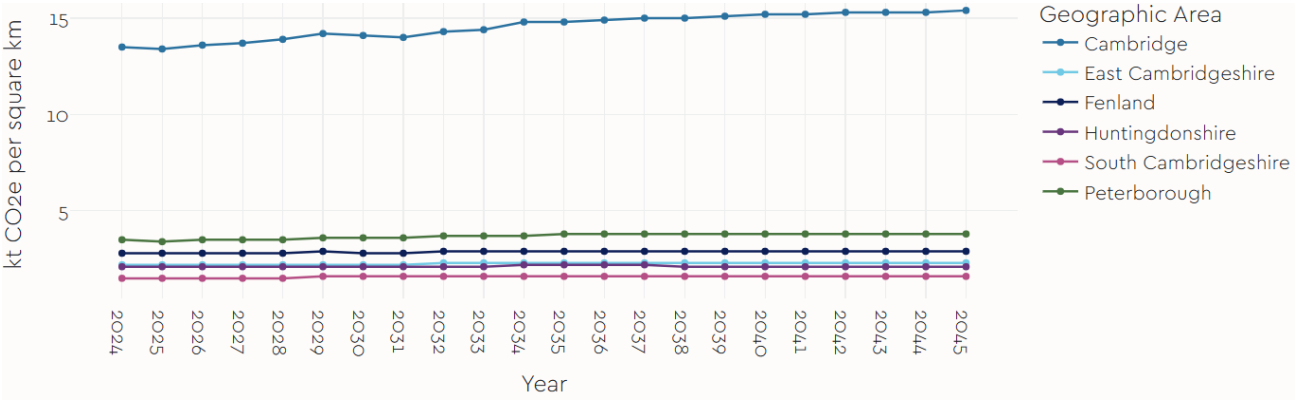


Figure 1-3: Emissions Forecast (per square kilometre) by Local Authority Area and by Year to 2045

1.3 Emissions Intensity Ratio

The emissions intensity ratio was computed by dividing the total territorial greenhouse gas emissions[14] by the total GVA[15] of each local authority area in C&P. Historically, increasing economic growth resulted in increasing greenhouse gas emissions. The emissions intensity ratio aims to show the extent to which economic growth is being decoupled from greenhouse gas emissions, i.e. the extent to which increased economic output and improved living standards in the region can be achieved without significant adverse climate impact. Figure 1-4 plots the emissions intensity ratios for C&P's local authority areas from 2005 to 2022.

[13] Cambridgeshire County Council, 2024. East of England Forecasting Model. [Link to source]
[14] DESNZ, 2024. UK local authority and regional greenhouse gas emissions statistics. [Link to source]
[15] ONS, 2025. Regional gross domestic product: local authorities. [Link to source]

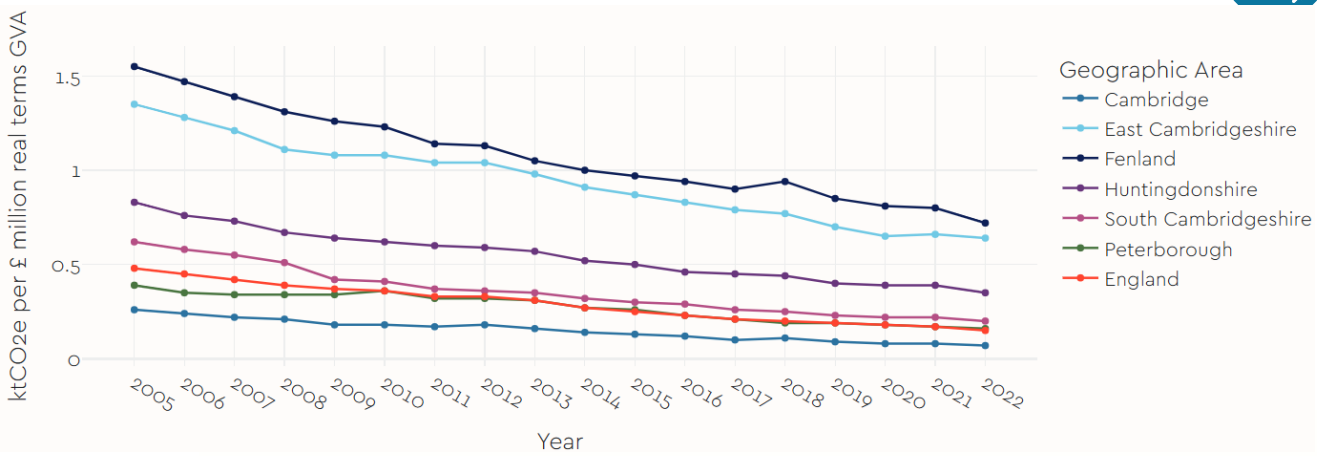


Figure 1-4: Emissions (per million GBP of Gross Value Added) by Local Authority Area & England and by Year

All areas across the C&P region had a decrease in their emissions intensity ratios over the past 18 years, to 2022. The drop was most significant in Cambridge, where the emissions intensity ratio decreased by 73.1% between 2005 and 2022. The lowest rate of reduction was observed in East Cambridgeshire, where the emissions intensity ratio fell by 52.6% over the same period. In 2022, Fenland and East Cambridgeshire had the highest emissions intensity ratios, standing at 0.7 and 0.6 kt CO_2e per million pounds of GVA, respectively, due to their relatively small economic outputs and high shares of emissions from land-use change and forestry. Cambridge, on the other hand, had the lowest ratio at 0.1 kt CO_2e per million pounds of GVA.

1.4 Greenhouse Gas Emissions Per Capita

This indicator reports the greenhouse gas emissions (GHG) of an area divided by its population. Population estimates were calculated by the ONS and Department for Energy Security & Net Zero (DESNZ) and reported in the same publication as the GHG emissions[16]. The figures were produced using a combination of data sources, including census-based mid-year population estimates for 2011 and 2021, and dynamic population model (DPM) admin-based population estimates (ABPE) for intervening years. Emissions per capita is another useful barometer for assessing the relative contribution of the C&P region to climate risks.

Combined Authority Comparators

Figure 1-5 charts the GHG emissions per capita for C&P and the Combined Authority areas in the peer group. Overall, emissions per capita decreased steadily in all areas. A dip in emissions occurred universally during 2020 and was likely the result of reduced travel and other changed behaviours during the COVID-19 pandemic. C&P had the highest emissions per capita compared to other combined authority peers and, furthermore, above England's rate. In 2022, the C&P region's emissions per person were over twice that of WECA (8.4 and 4.1 kt CO_2e per capita, respectively). From 2015 to 2022, all the other combined authority areas in the peer group had emissions below England's rate. C&P's higher level of emissions per capita is likely due to the large amount of land use, land use change and forestry (LULUCF) emissions in the region. Emissions from LULUCF are largely driven in the C&P region by the prevalence of peat bogs being drained for cropland.

C&P's absolute reduction in emissions per person throughout 2015 to 2022 was comparable across all the comparator areas, between 0.9 and 1.1 kt CO_2e per capita lower. However, C&P experienced the smallest relative reduction in emissions, decreasing by 11.4% whilst England

[16] DESNZ, 2024. UK local authority and regional greenhouse gas emissions statistics. [Link to source]

at 17% and the other three combined authority areas had reductions ranging from 17.6% (WECA) to 18.9% (SYCA).

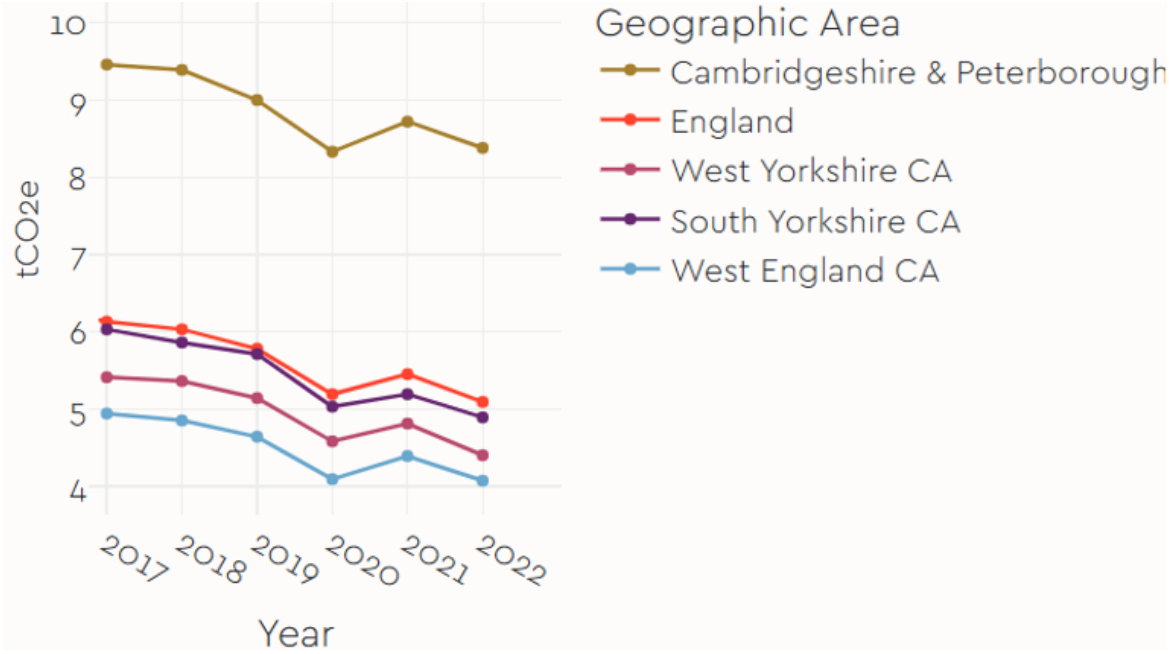


Figure 1-5: Greenhouse Gas Emissions (tCO_2e) per Capita by Combined Authority Area & England and by Year

Local Authority Comparison

Figure 1-6 plots the GHG emissions per capita from 2005 to 2022 by local authority area. Trends in the emissions per capita show a steady decrease across all areas, with the largest reduction in Cambridge at 55.9%. It is notable that urban areas in C&P had lower absolute emissions per capita compared to the more rural areas. East Cambridgeshire, for example, had emissions per capita that were more than four times higher than those of Cambridge (15.2 tCO_2e per person compared to 3.7 tCO_2e per person). There are a number of possible explanations for this, including better access to low-carbon public transport, shorter average journey distances, a higher share of energy-efficient buildings, a higher share of multi-family buildings (shared envelopes, central Heating, Ventilation and Air Conditioning (HVAC), smaller living space, etc.). It could also be explained by Cambridge's higher share of economic output in the knowledge-intensive sector, which, on average, is lower emitting than East Cambridgeshire's higher share of LULUCF and agricultural emissions.

Apart from the denser urban areas of Cambridge and Peterborough, all the C&P local authority areas emitted more than the 5.1 tCO_2e per person rate in England in 2022. East Cambridgeshire and Fenland had emissions that were around three times higher than those of England, at 15.2 and 14.4 tCO_2e per person, respectively.

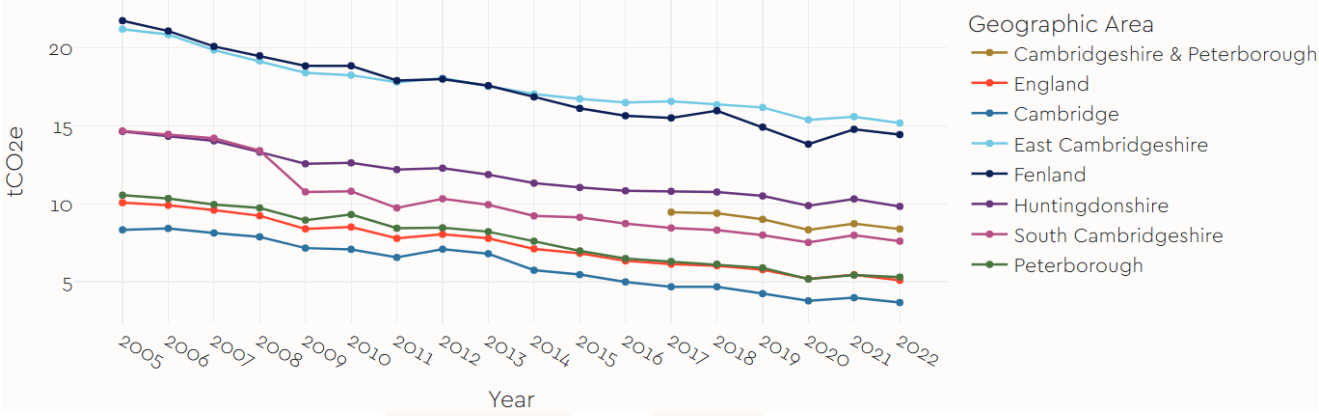


Figure 1-6: Greenhouse Gas Emissions (tCO_2e) per Capita by Local Authority Area & England and by Year

1.5 Greenhouse Gas Emissions by Sector

National data on territorial greenhouse gas emissions disaggregated and categorised emissions across eight different sectors as follows:

Industry	Domestic	Agriculture
Commercial	Transport	LULUCF
Public Sector	Waste Management	

It is important to track emissions changes by sector to help ensure decarbonisation plans are appropriately targeted and that the effect of any sector-specific interventions can be monitored.

Figure 1-7 plots the emissions (ktCO2e per square km) by sector in C&P from 2005 to 2022. Figure 1-8 charts the percentage contribution by sector based on the latest year of data, in 2022. The share of emissions by sector in C&P largely matched that of other local authorities in England, with transport being responsible for an increasing share of emissions over time, whereas other emissions in other sectors have reduced, and the domestic sector and industrial and commercial sectors contributing roughly equally to the total. However, C&P's extremely high share of emissions from LULUCF is notable and a rather unique challenge for the region. While England emitted zero emissions in LULUCF owing to sequestration in forestland and grassland, C&P had a significant 20.9% of its total emissions coming from the LULUCF sector. Agricultural activity, the drying of peatland, and low levels of tree cover cause significant LULUCF emissions, particularly in East Cambridgeshire (40.9% of its total emissions), Fenland (36.4% of its total emissions), and to a lesser amount Huntingdonshire (16.2% of its total emissions).

Across the entire C&P region, total emissions from all sectors dropped by 29% between 2005 and 2022, whereas the reduction in England, overall, was 42.8%. The largest decrease was in the industrial sector, in which emissions fell by 57.6% between 2005 and 2022. The decrease in transport emissions since 2005, at just 4.2%, was much lower compared to other sectors' reductions in C&P, whilst LULUCF emissions remained relatively constant, only decreasing by 1.0% since 2005.

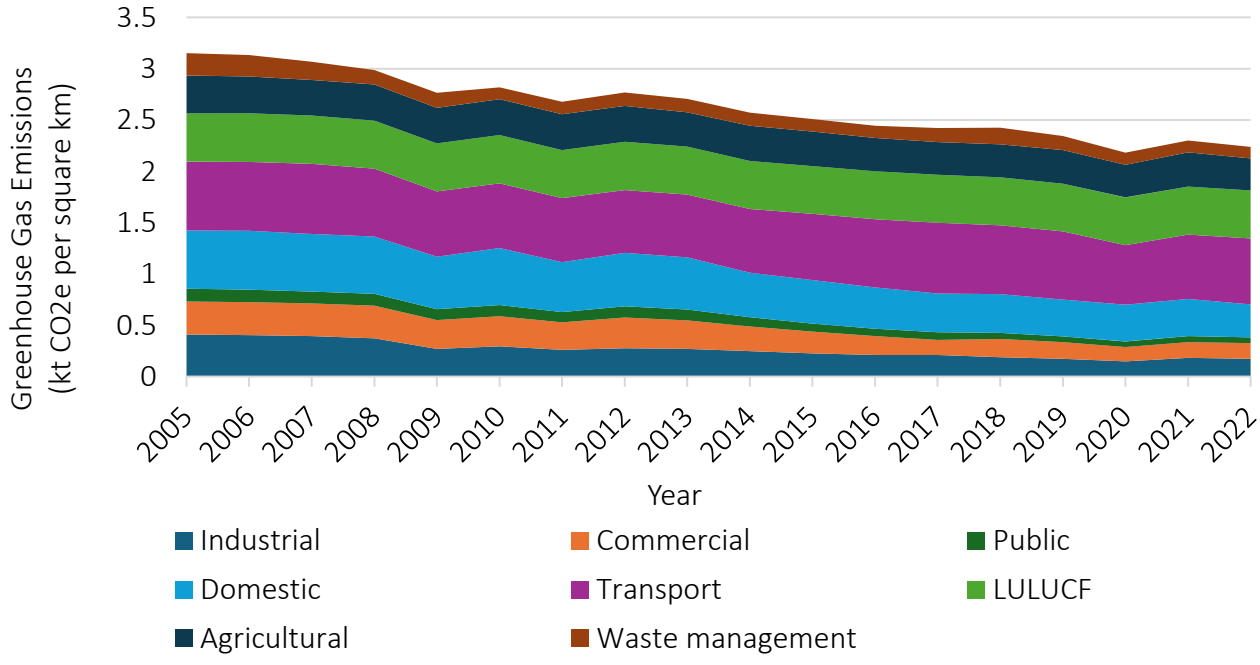


Figure 1-7: Greenhouse Gas Emissions (kt CO_2e per square km) by Sector in C&P by Year

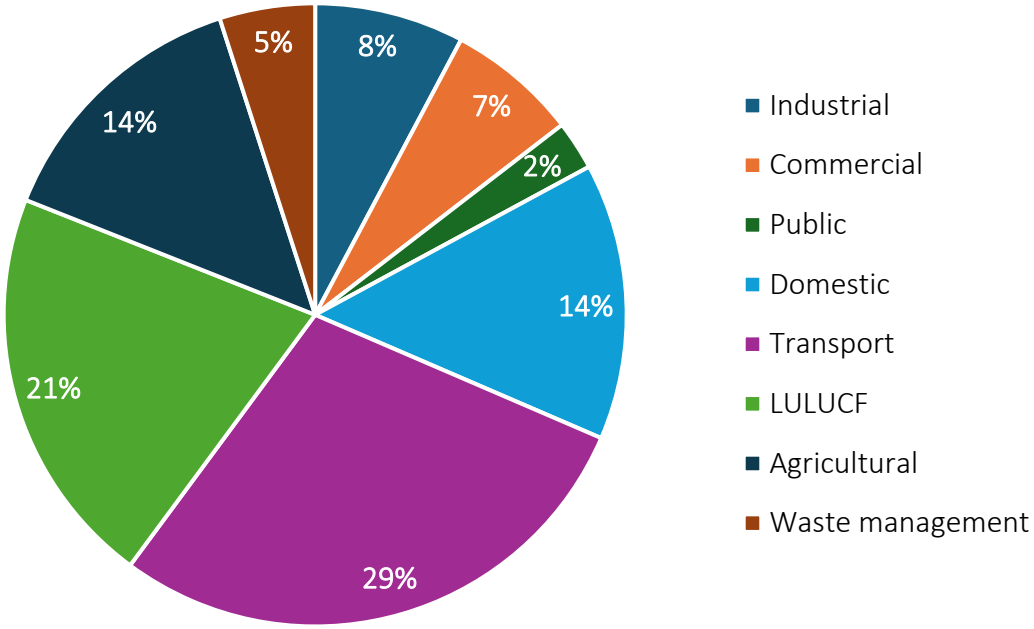


Figure 1-8: Greenhouse Gas Emissions in C&P (%) by Sector in 2022

2 Energy Efficiency

2.1 Energy Consumption

The Department for Energy Security and Net Zero (DESNZ) dataset covering energy consumption, consolidates energy consumed across all fuel types (coal, manufactured fuels, petroleum, gas, electricity and bioenergy and energy from waste) by local authority area[17]. Units used were ktoe (kilotonnes of oil equivalent), which standardised the differences between energy released upon combustion of each fuel type to allow for all fuel types to be combined into a single figure. Due to the wide range of fuel types captured in the dataset, the use of the energy included was also highly varied and included domestic and non-domestic uses as well as transport applications. In this section, energy consumption is reported by square km.

Figure 2-1 plots the data on energy use per square kilometre for C&P from 2011 to 2022. Whilst there is likely to be some correlation between building density and energy consumption, the data included more than just building consumption, and as such, other uses might dominate, such as transport. Cambridge, as a relatively dense urban area, had the highest energy consumption per square kilometre at 4.85 ktoe/km^2 in 2022. Though Peterborough had a comparatively low energy consumption per square kilometre, at 1.07 ktoe/km^2, suggesting that the emissions were a result of more than purely building density. Indeed, it is important to consider the spatial differences between the two city areas. The area covered by Peterborough (343km^2) is sizeably larger than Cambridge (41km^2) when both have a similar population size. Apart from these two local authority areas, no other C&P local authority area had an energy usage greater than England's 0.75 ktoe/km^2. East Cambridgeshire had the lowest energy use per square kilometre at 0.31 ktoe/km^2. These findings are consistent with the analysis of GHG emissions per square kilometre, where a similar pattern of local authority area activity was evident.

Overall, energy consumption per square kilometre either increased or decreased only slightly since 2011 across the local authority areas in the C&P region. Some year-on-year variation could be due to variations in seasonal temperatures influencing energy use for heating and cooling rather than being attributable to wider systemic change.

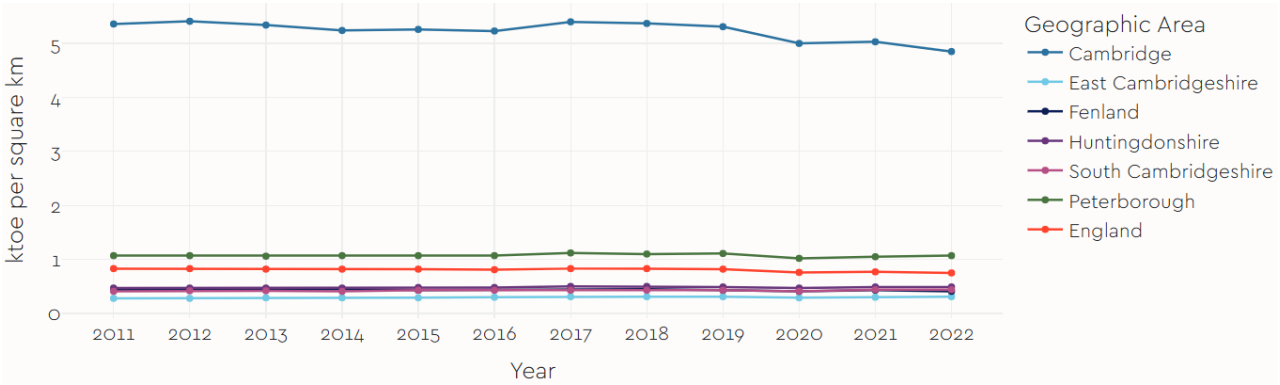


Figure 2-1: Energy Consumption (ktoe per square km) by Local Authority Area & England and by Year

2.2 Energy Performance Certificate Registrations C+

Energy Performance Certificates (EPCs) are a standard for reporting the energy efficiency of a building; a building that is more energy efficient has a higher EPC score. Properties are scored on a grading system that ranges from A-G, with A being the most efficient and G the least. The data[18]

[17] DESNZ, 2024. Total final energy consumption at regional and local authority level. [Link to source]
[18] DLUHC, 2025. Live tables on Energy Performance of Buildings Certificates. [Link to source]

included the EPC registrations for domestic properties, both existing and newly registered, in England and excluded any property with an expired or invalid EPC certificate.

To achieve net-zero by 2050, it is expected that all properties will need to have an EPC rating of at least C. Therefore, this indicator reports the percentage of EPC registrations with a grade of C or above in the fourth quarter (October-December) of each year. It should be noted that the data only captured the properties where a registration was entered, and, while EPCs for park homes have been lodged on the register since 2014, there is no requirement for park homes to have an EPC. The exclusion of properties without EPC ratings means that some of the least energy-efficient homes—often occupied by the most vulnerable residents—are missing from the dataset. As a result, the analysis may underrepresent the true scale of energy efficiency challenges in the region, particularly in areas with a high concentration of non-EPC-rated dwellings.

Figure 2-2 plots the percentage of EPC registrations rated C or higher across C&P from 2013 to 2024. It shows that the percentage of domestic property EPC registrations rated C or higher increased within C&P. This increase may be influenced by improvements in existing building stock (e.g. retrofitting) and higher standards of new dwellings or existing EPCs becoming invalid due to age. In the final reporting quarter in 2024, the highest proportion of EPC registrations rated C or higher was in Cambridge at 72.6%. In the same quarter, East Cambridgeshire had the lowest percentage of domestic properties rated C or above at 66.2%. However, all of C&P's local authority areas had a percentage of domestic properties with an EPC rate C or above higher than England, in 2024, which was 63.4%. C&P, overall, had a percentage rate of 70.2%.

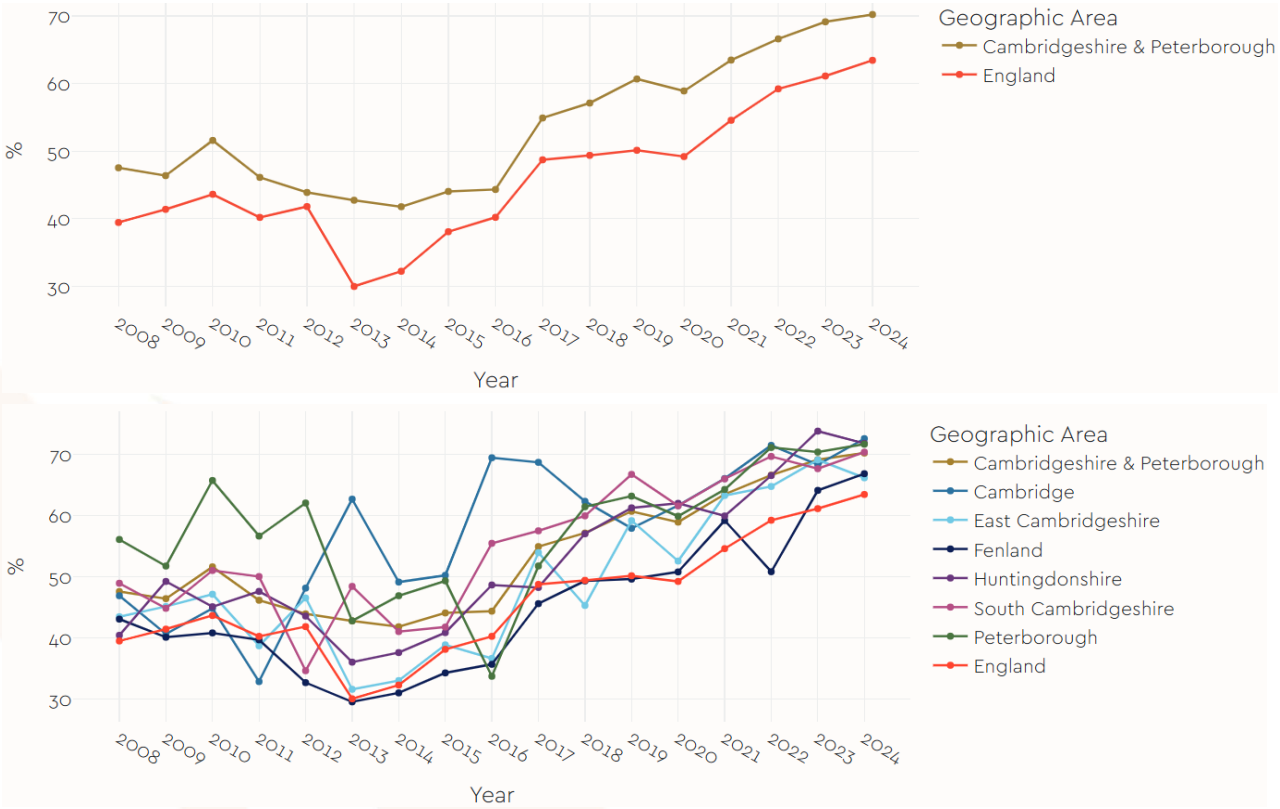


Figure 2-2: EPC registrations at C or above (% of Domestic Properties with EPC lodgements) by Local Authority Area & England and by Year

Figure 2-3 maps the EPC data by MSOA to show the geographic distribution of EPC registrations rated C or above. It shows that some MSOAs had very high proportions of registrations that are EPC grade C and higher, for example, an MSOA in South Cambridgeshire reported 86.6% of registrations being at EPC grade C or above. Peterborough and Cambridge both have areas where the percentage of registrations at C and above was over 86%. There is often a strong link

between areas with new build development activity and higher proportions of EPC registrations above C for a number of reasons. Firstly, new build developments often have a higher energy efficiency performance than older properties, and secondly, as new build developments are completed, this drives EPC registration activity. Figure 2-3 also shows that the rural areas and the areas within city centres typically had a lower level of registrations that were grade C or above. This is often as a result of older properties being located in these areas.

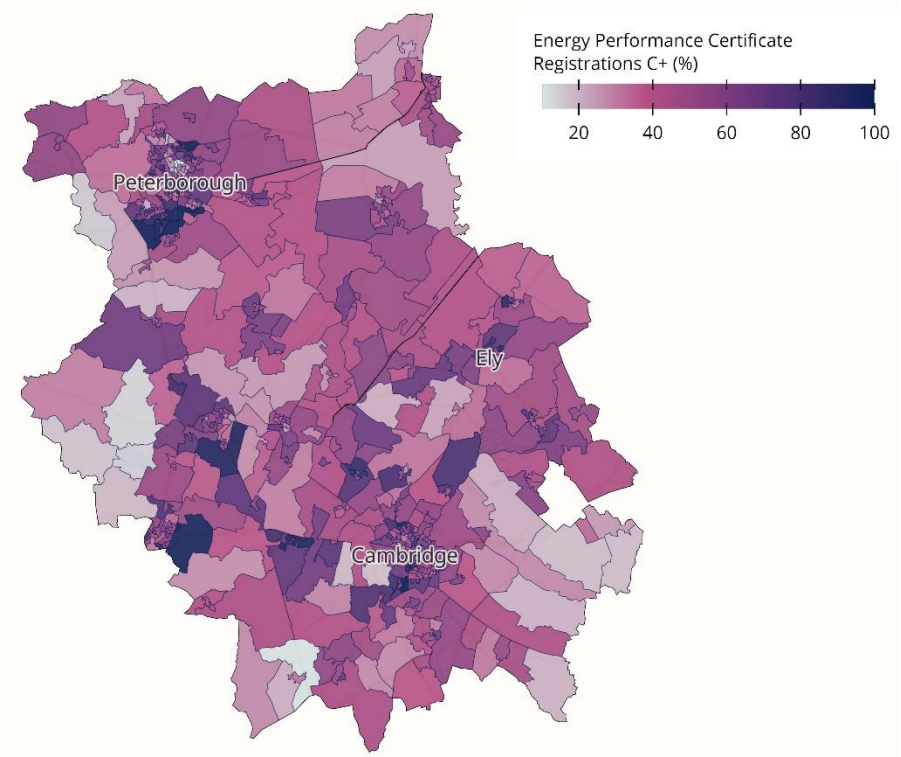


Figure 2-3: Percentage of Domestic Properties with EPC Registrations Grade C or Above in 2024 by C&P MSOA

2.3 Renewable (Solar PV) Capacity

Solar PV is a method of renewable electricity generation using sunlight. This indicator[19] reports the installed capacity for renewable generation using solar PV for all local authority areas within C&P. The capacity was defined as the maximum amount of energy that can be produced by all existing solar installations in an area within one hour, measured in megawatts (MW).

Figure 2-4 charts the installed solar PV capacity in MW from 2014 to 2023. This shows that Solar PV capacity more than doubled in the C&P region since 2014, with a 192.9% increase reached in 2023. 41.4% of all installed Solar PV capacity was located in South Cambridgeshire, a total of 291 MW. East Cambridgeshire had a Solar PV capacity of 165 MW that was 23.5% of C&P's total, meaning that along with South Cambridgeshire, the two local authority areas held 64.8% of all of C&P's Solar PV capacity. In absolute terms, installed capacity grew the most in South Cambridgeshire, from 90 MW in 2014 to 291 MW in 2023, adding 201 MW in the last decade of available data.

[19] DESNZ, 2024. Renewable electricity by local authority. [Link to source]

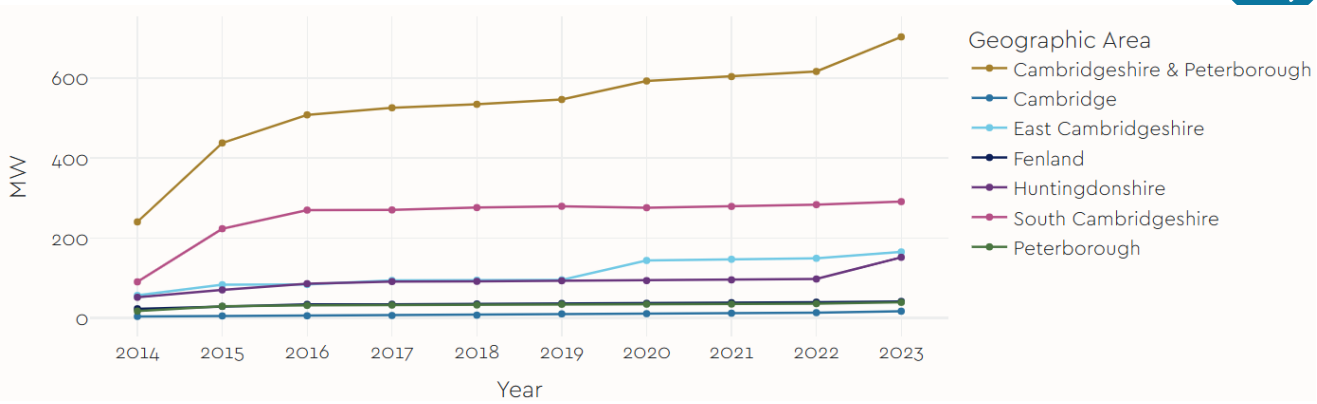


Figure 2-4: Solar PV Capacity (MW) by Local Authority Area and by Year

2.4 Renewable Energy Generation

This indicator reports the energy produced by all renewable sources within the C&P region[20]. However, whereas capacity measures the maximum possible energy produced, this dataset captured just the energy that was actually produced. Renewable energy included Solar Photovoltaics (38.9% of C&P's total); Wind (34.3% of C&P's total); Hydro, Wave and Tidal; and Waste/Plant Biomass Combustion (26.8% of C&P's total).

Figure 2-5 plots the total renewable energy generation in megawatt hours (MWh) from 2014 to 2023. Since 2014, renewable energy generation in C&P increased by 68.6% to 1,620,000 MWh. In 2023, 27% of the generation came from East Cambridgeshire (at 438,000 MWh), 23.3% came from South Cambridgeshire (at 378,000 MWh), while 20.7% came from Huntingdonshire (335,000 MWh).

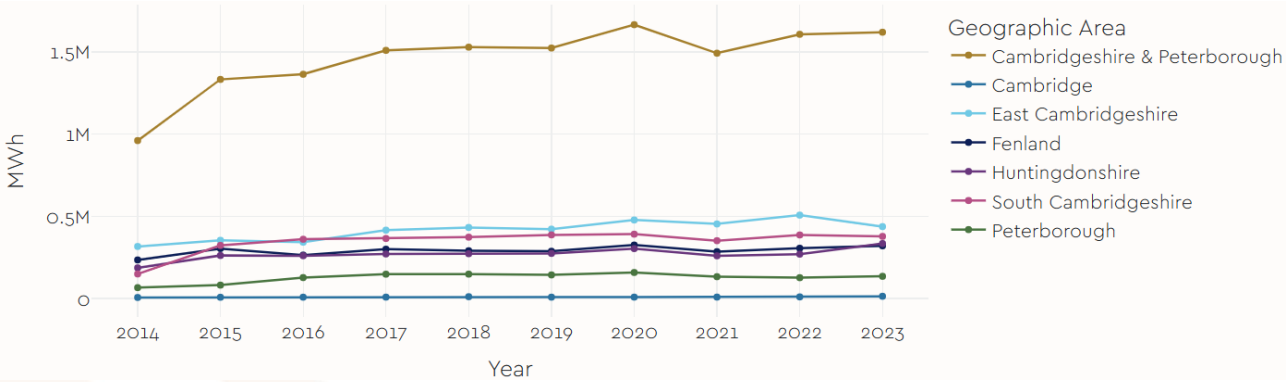


Figure 2-5: Renewable Energy Generation (MWh) by Local Authority Area and by Year

[20] DESNZ, 2024. UK local authority and regional greenhouse gas emissions statistics. [Link to source]

3 Waste & Circular Economy

3.1 Waste Produced

This indicator employed the aggregate total of waste collected by local authorities[21], which was also used to calculate the proportion of waste which was recycled in each local authority area. This dataset only measured waste collected by local authorities, or their contractors; it therefore did not include waste collected by private companies. It also excluded material rejected from collection or at the gate of the recycling processor. Waste deposited directly at recycling centres is not included in this dataset. The measure identifies major waste producers in the region, in order to focus efforts on waste reduction and management. The waste collection for Cambridge City and South Cambridgeshire is a joint enterprise (Great Cambridge Shared Waste Services) and as such, data was not disaggregated between the two local authorities. Subsequently, time series data was not available for every local authority area.

Figure 3-1 plots the available data for waste collected by financial year. All areas had relatively small, long-run changes in total waste collected. East Cambridgeshire had the largest increase between 2014-15 and 2023-24, at 3.8%, reaching 33,500 tonnes of waste collected in 2023-24. However, East Cambridgeshire had the least amount of waste produced in every year. The Greater Cambridge area had a decrease of 0.7% between 2014-15 and 2023-24, falling to 115,500 tonnes of waste. All areas had an increase in waste collected in the latest year-on-year period between 2022-23 and 2023-24. However, this was largely the result of low compostable waste during the Summer 2022 drought, rather than a marked shift in residents' behaviour.

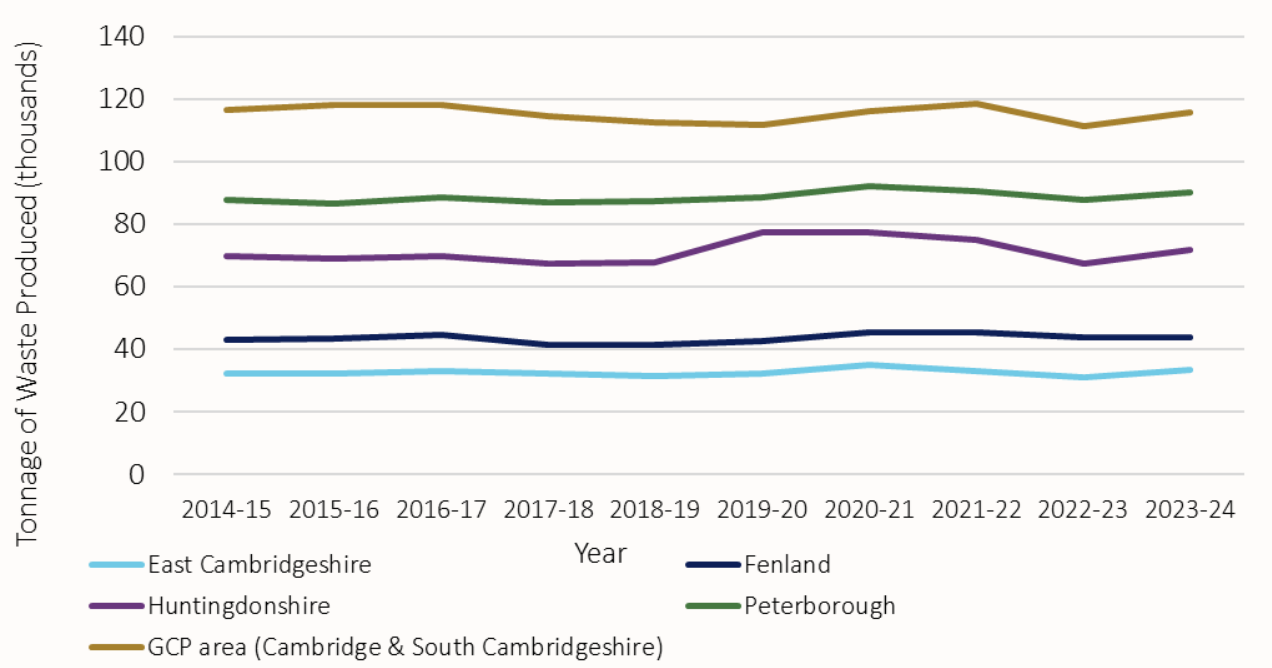


Figure 3-1: Tonnage of Waste Produced (thousands) by Local Authority Area and by Year

3.2 Waste Recycled

The C&P region had a recycling and composting rate[22] for local authority collected waste of 48.2% in 2023-24. Recycling and composting rates in East Cambridgeshire (53.6%) and Huntingdonshire (52.2%) were above the recycling and composting rate of C&P overall, whereas all the other local areas had a recycling and composting rate below C&P's rate. At 38.4%, Fenland had the lowest recycling and composting rate, followed by Peterborough at

[21] DEFRA, 2024. Local authority collected waste management - annual results. [Link to source]
[22] DEFRA, 2024. Local authority collected waste management - annual results. [Link to source]

41.4%. There was no data available on waste routes for non-recycled waste. Figure 3-2 plots the available data for the tonnage of local authority collected waste recycled by year. All areas had relatively small, long-run changes in total waste recycled. All local areas had increase in waste recycled in the latest year of 2023-24 compared to the previous year; the tonnage of waste recycled increased the most in East Cambridgeshire at 8.8%, followed by Huntingdonshire at 7.5%.

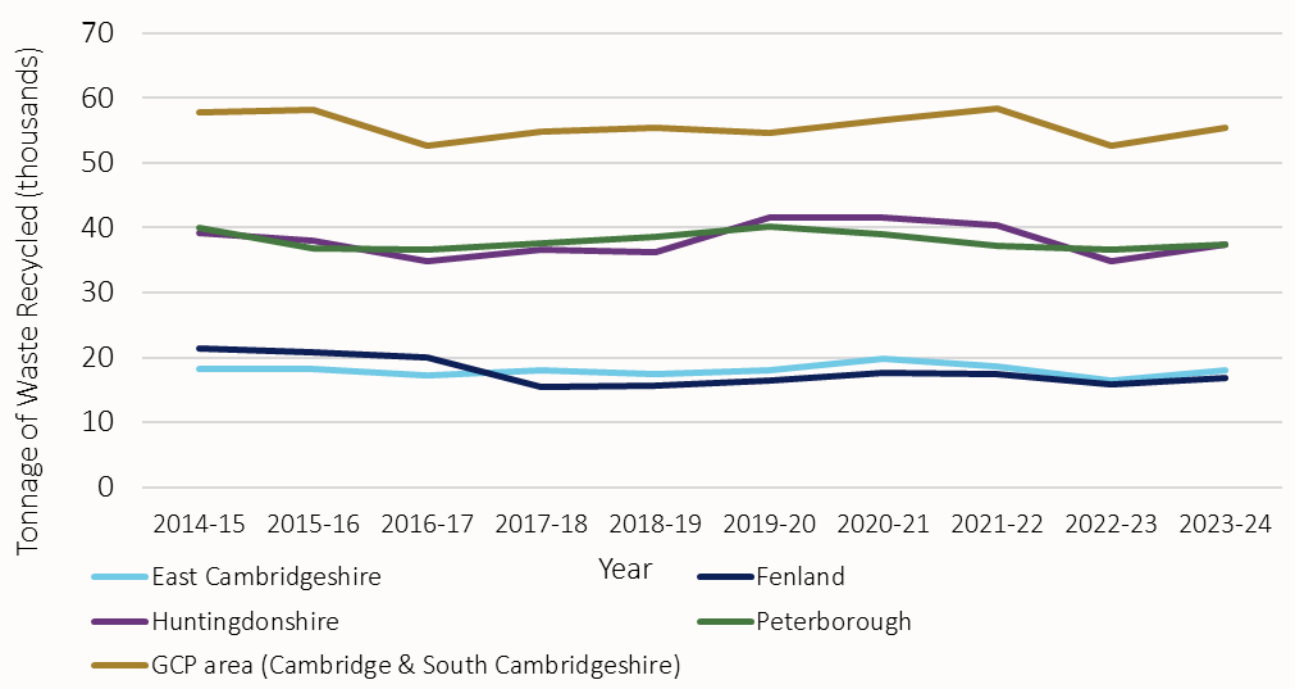


Figure 3-2: Tonnage of Waste Recycled (thousands) by Local Authority Area and by Year

Table 3-1 contains the recycling-composting-re-use percentage rate of household, non-household and all waste collected for C&P's local authority areas, for comparison.

Area	Household Waste Recycling-composting-re-use rate (%)	Non-household Waste Recycling-composting-re-use rate (%)	All Local Authority Collected Waste Recycling-composting-re-use rate (%)
GCP – Cambridge & South Cambridgeshire	48.6	41.6	48.0
East Cambridgeshire	56.0	0.0	53.6
Fenland	40.0	10.4	38.4
Huntingdonshire	53.9	0.0	52.2
Peterborough	39.6	69.6	41.4
C&P	47.5	56.4	48.2

Table 3-1: Household, Non-household and All Waste (percentage rate) Recycled-composted-re-used by Area

The table shows variability in the recycling-composting-re-use rates across C&P's local authority areas and across the household and non-household waste streams.

3.3 Waste Per Person

All C&P areas produced similar amounts of household waste collected per person in a range of 330kg in the Greater Cambridge area to 400kg in Fenland. However, Fenland was the only local area in C&P that had a reduction in its waste per person in 2023-24, dropping by 4kg of waste per person from the previous year. Huntingdonshire had the largest rise in waste per person in 2023-24, a 5.2% increase, which resulted in almost an additional 20kg of waste per person in one year from 2022-23. However, between 2014-15 and 2023-24, all areas' waste per

person reduced. Peterborough had the largest relative reduction at 10.6% during this period. Both Fenland and Huntingdonshire had a 6% decline, followed by East Cambridgeshire at 5.2%. While no results are available for the Greater Cambridge area for 2014-15 as figures were reported separately for Cambridge and South Cambridgeshire prior to 2016-17, recent levels are lower than reported for both areas in 2014-15 so there has been a reduction there.

3.4 Waste Landfilled

Figure 3-3 charts the waste collected, recycled, and not recycled (landfilled) in the C&P region in 2023-24. East Cambridgeshire had 15,500 tonnes of waste that was not recycled, the lowest absolute amount across all areas. Fenland had 27,000 tonnes, followed by Huntingdonshire at 34,200 tonnes. Peterborough and the Greater Cambridge area had the highest amounts of waste that was not recycled, at 53,000 tonnes and 60,100 tonnes, respectively. Fenland was the only local area that had a reduction in the tonnage of waste produced that was not recycled in 2023-24, recording a 3.1% decline from the previous year.

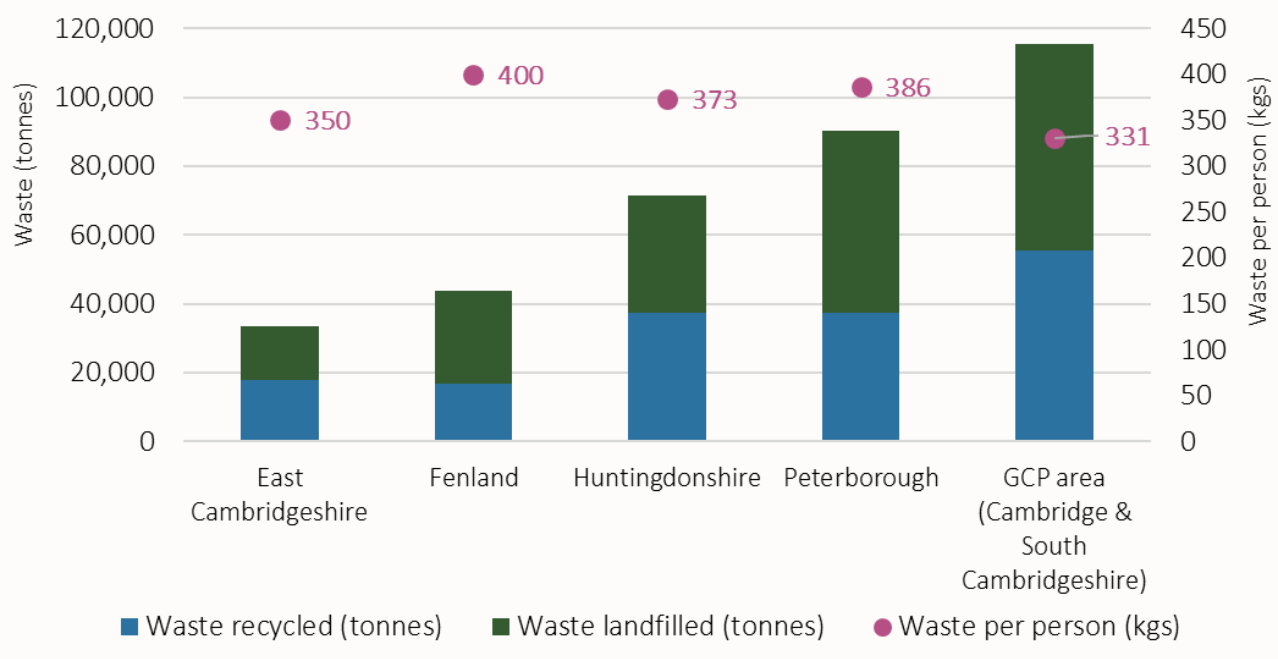


Figure 3-3: Tonnage of Waste and Waste per Capita (kg) by Local Authority Area in 2023-24

4 Climate Resilience

4.1 Extreme Weather Days

Data concerning extreme weather days can help uncover the impacts of climate change and to assess related risks to the C&P region. Extreme weather days[23] can be measured using two metrics of:

- Extreme summer days at over 35°C
- Extreme rainfall days at over 10mm of rainfall

The annual count of extreme summer days was the number of days per year where the maximum daily temperature was above 35°C. The data contains how many times the threshold was exceeded in a year. The data charted in Figure 4-1 was collected between 2001 and 2021. The C&P region had an annual median number of extreme summer days across the 20-year period at 0.4 days. When broken down by local authority area, Cambridge had the highest median value at 0.45 days, which can be expected as it is an urban area. South Cambridgeshire had the lowest value at 0.38 days.

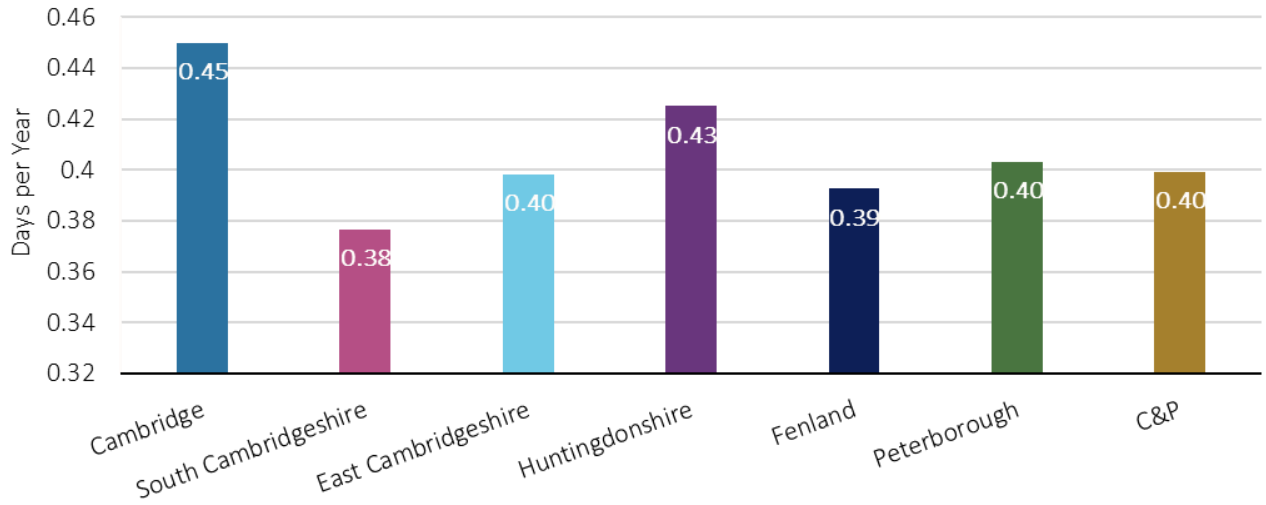


Figure 4-1: Average Extreme Summer Days (+35°C) between 2001 and 2021 by Local Authority Area

The annual average extreme rainfall days dataset contains the number of ≥10mm rainfall days averaged over the 1991 to 2020 period, which is charted in Figure 4-2. In C&P, there were 12.1 days annually with 10mm or more of rainfall. All C&P's local authority areas had around 12 days, with Peterborough having the highest at 12.5 days, whilst Fenland had the lowest at 12 days.

[23] Met Office, 2024. Annual Count of Extreme Summer Days - Projections (12km) [Link to source] & Met Office, 2024. Annual Count of 10mm Rainfall Days 1991 - 2020. [Link to source]

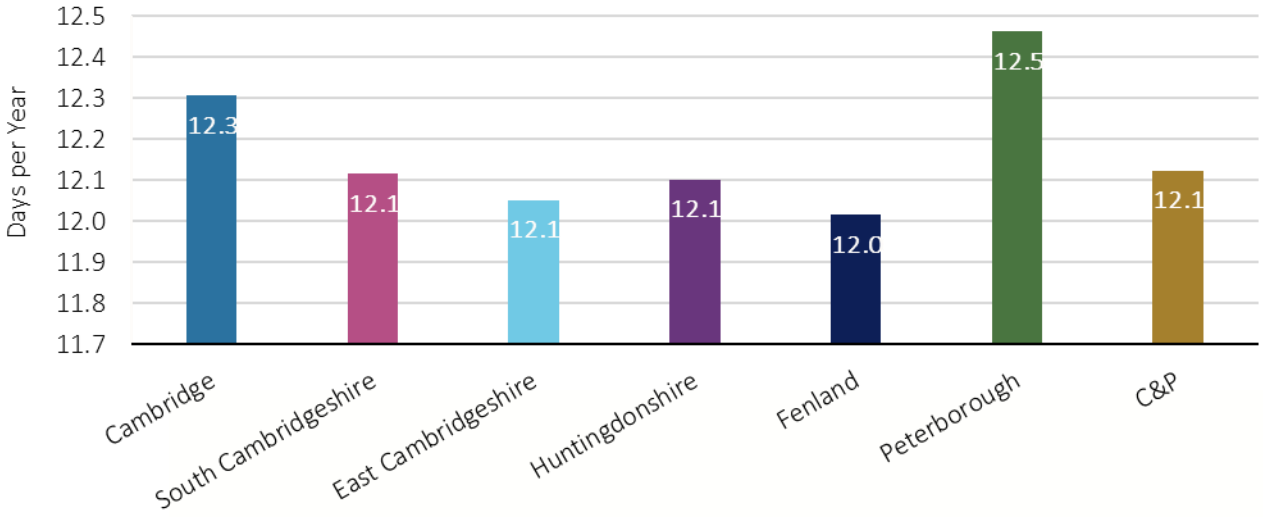


Figure 4-2: Average Extreme Rainfall Days (≥10mm) between 1991 and 2020 by Local Authority Area

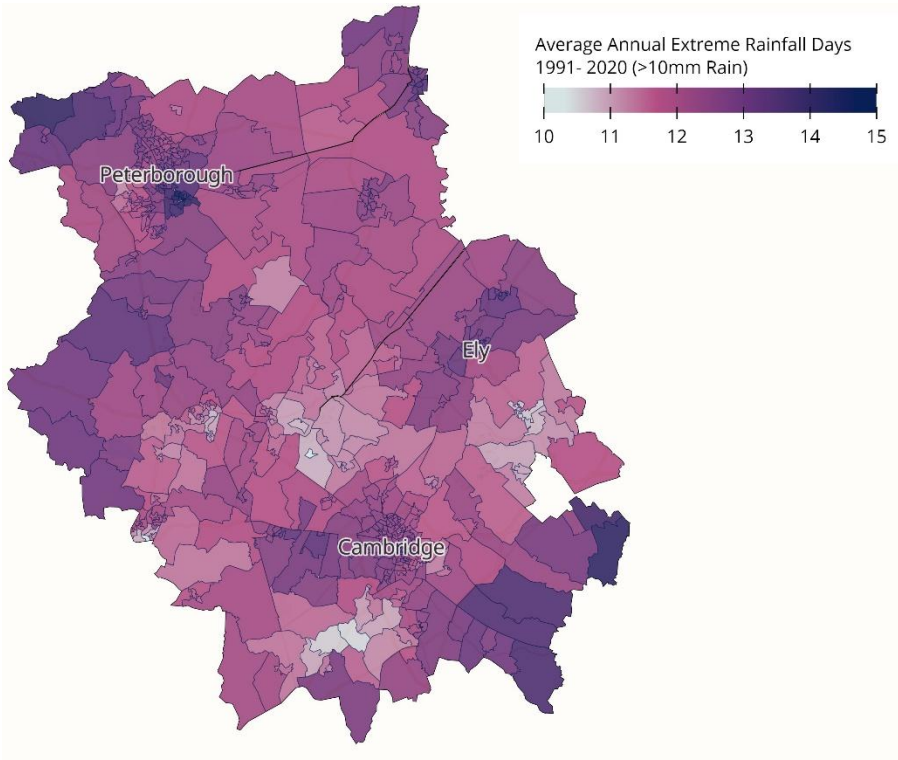


Figure 4-3 maps the data by LSOA. The southeast of the region, in East Cambridgeshire and the northwest around Peterborough have LSOAs that had particularly high levels of extreme rainfall. One LSOA in East Cambridgeshire had an average of 15.6 annual extreme rainfall days over the 20-year period, and one LSOA in Peterborough had 15.5 days.

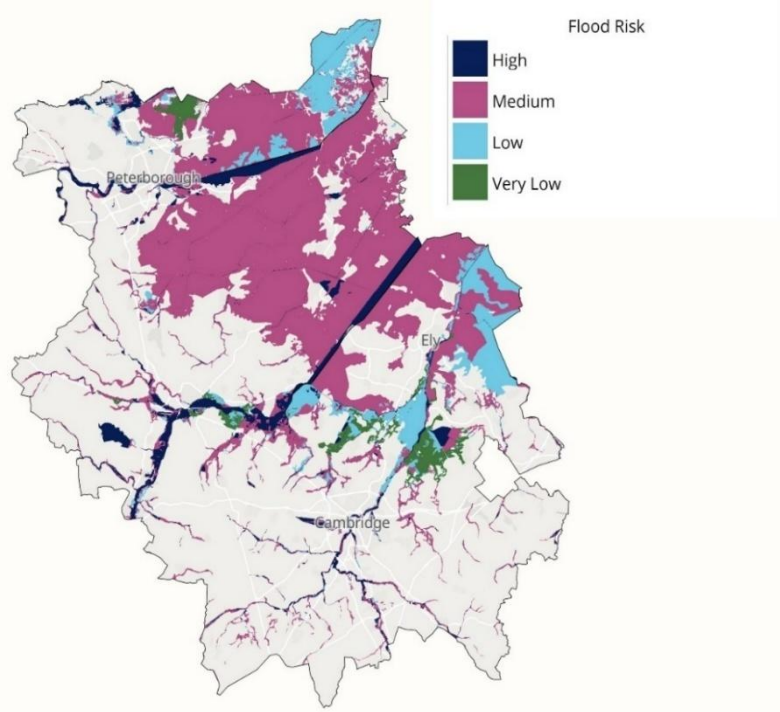
Figure 4-3: Average Annual Extreme Rainfall Days (≥10mm)

The areas that had the highest average annual extreme rainfall days tended to fall in locations where there is a higher elevation above the ground. The areas that had the lowest average annual extreme rainfall days are in the more central areas of the region, particularly in Huntingdonshire and South Cambridgeshire.

4.2 Flooding Risk

Flood risk data was used to analyse the risk of flooding from rivers and the sea across the C&P region and within each local authority area[24]. The dataset contains the chance of flooding from rivers and/or the sea, based on a 50m x 50m grid. Each cell was allocated one of four flood risk categories, accounting for flood defences and their condition. The flood risk categories represent the likelihood of the area to flood in a given year, from less than 0.1% chance (Very Low), between 0.1% and 1% (Low), between 1% and 3.3% (Medium) and more than 3.3% (High). Climate change makes flooding more unpredictable and likely more frequent, and as such, this data represents the best estimate of near-term flooding risk.

The data was analysed using GIS to find the proportion of land within each local authority that had flood risk at any of the four risk categories (Figure 4-4 and Figure 4-5). Data shows that across the C&P region, 37% of land is at risk of flooding from rivers and the sea. Should surface water flooding risks also be considered, the overall flood risk may be greater still.



Fenland has the highest proportion of land that is at risk of flooding (at 83%), while Cambridge has the lowest proportion of land at flood risk (at 8%). Areas with the highest proportion of land at risk are generally those that are at, or close to, sea level elevation or near a river. The Fens is a historically drained wetland and floodplain with fertile peat soils. This engineered landscape has made the Fens ones of the UK's most important agricultural regions and vulnerable to flooding.

Figure 4-4: Flood Risk Areas by Risk Classification

Figure 4-4 maps the flood risk across C&P spatially. The map highlights the prevalence of land at risk from flooding from rivers and the sea in the northeast of the region, particularly in Fenland. Areas of high risk are around the main waterways in the region. Most land at risk of flooding is considered to be of medium risk due to the low topography of the land. Cambridge and South Cambridgeshire have minimal land that is considered at risk of flooding apart from along the main waterways. The topography is higher in the south compared to the northern areas of the region, which also affects the general risk.

[24] Environment Agency, 2024. Risk of Flooding from Rivers and Sea. [Link to source]

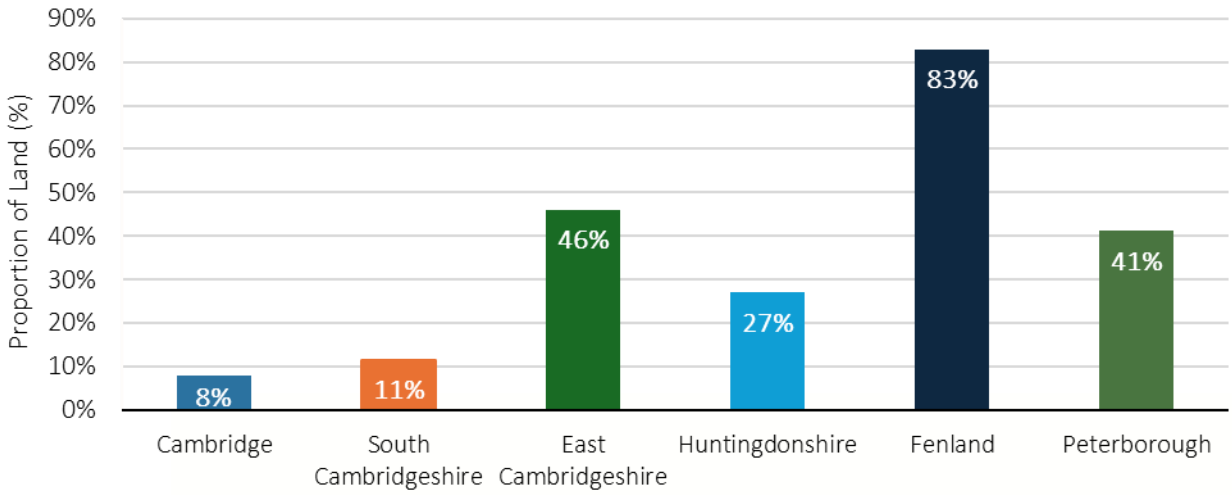


Figure 4-5: Area at Risk of Flooding (%) by Local Authority Area