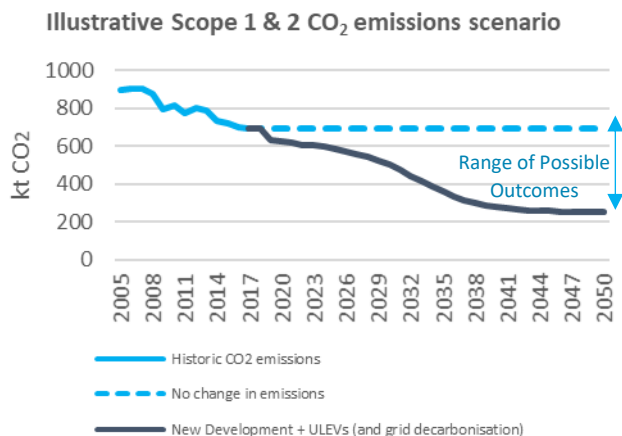
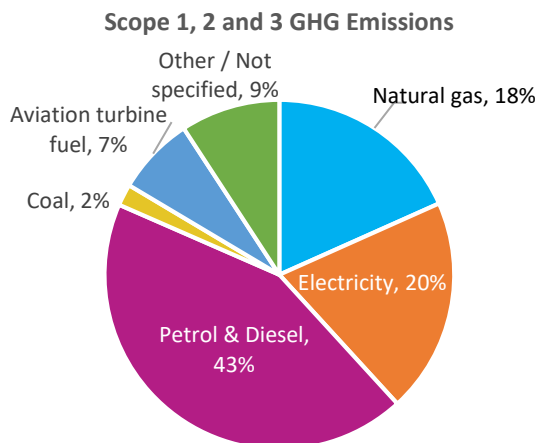


Lichfield Climate Change Mitigation & Adaptation Report

AECOM has been commissioned to contribute towards a technical evidence base for new energy and sustainability policies for Staffordshire County Council and its eight constituent Local Authorities. This note summarises key issues for Lichfield.



Total Scope 1, 2 and 3 GHG emissions are c.750,000 tonnes CO₂ per annum and per capita emissions are 7.2 tonnes CO₂ per annum. On a per capita basis, this is lower than the average for Staffordshire county and higher than the average for the UK (7.4 and 5.4 tCO₂ p.a. respectively). The largest single source of emissions in Lichfield is from petrol and diesel, mainly for road transport use, followed by emission from the use of electricity and natural gas in buildings. For further details, please see the Baseline Report.

The above figure shows that, even when accounting for new development, the decarbonisation of grid electricity and switching to Ultra-Low Emission Vehicles (ULEVs) in Lichfield could result in up to a 64% decrease in CO₂ emissions by 2050 compared with 2017 levels. However, this outcome is highly uncertain which means it is important to take local action. Other emissions would have to be eliminated through energy demand reduction, building fabric improvements, renewable energy generation, switching to low carbon heating and offsetting remaining emissions.

Lichfield's Illustrative Path to Net Zero



Sustainable Transport

2020

323 ULEVs
12 EV Charge-Points

2030

30% of vehicles are ULEVs

2050

100% of vehicles are ULEVs

ULEV projections are based on the National Grid's Future Energy Scenarios.



Renewables

9.5 MW of Solar PV
2 MW of Onshore Wind

100% of energy demands met with renewables



Built Environment

35,000 Gas boilers
2,250 Electric Boilers
1,500 Oil Boilers

16% of heating systems are served by Heat Pumps

57% of heating systems are served by Heat Pumps

Note: 2020 data is from 2011 census.

Heating technology projections are based on the National Grid's Future Energy Scenarios.



Natural Capital

Net 8,50 tCO₂ Sequestered Annually

+3,100 tCO₂ Sequestered Annually

Carbon sequestration projections are illustrative, based on 100% conversion of SCC landholdings in Lichfield to woodland.

Policy Options

Reducing CO₂ Emissions in the Built Environment

- Require all proposals to meet or exceed Building Regulations through energy efficiency alone
- New proposals should be 'futureproofed' to facilitate uptake of low-carbon heating, onsite energy generation and energy storage.
- Aim to achieve Net Zero regulated & unregulated emissions.
- Consider requiring developers to conduct Lifecycle Carbon Assessments (LCA) and monitor & report on operational energy use and CO₂ emissions.
- Set high standards for water efficiency and conservation including rainwater collection.

Holistic Interventions in Development

- Incorporate circular economy principles such as designing out waste, adaptability, reusability etc.
- Consider requiring applicants to undertake a BREEAM or HQM assessment (or similar) with a minimum target for relevant credits achieved.
- Integrate and co-locate green and blue infrastructure with pedestrian and cycle routes and sustainable drainage systems (SuDs).
- Integrate LZC technologies into the built environment.
- Specify locally sourced materials with a low environmental impact.

Low & Zero Carbon (LZC) Technologies

- Require developments to demonstrate how layout, orientation and massing has been designed to maximise opportunities for on-site renewables.
- Set a target for the proportion of energy demands to be met from on-site renewables.
- Increase support for LZC energy developments that meet local criteria for acceptability and seek to broaden those criteria.
- Encourage the development of heat networks where appropriate.

Climate Risks & Adaptation

- Direct / restrict future development to areas with lower flood risk.
- Require planning applications to consider long term flood risk projections in assessing flood risk and SuDS design.
- Ensure all future development considers the urban heat island effect in its design.
- Require planning applications for future developments to consider thermal comfort, e.g. through a dedicated overheating assessment (in line with CIBSE TM52 or equivalent) that considers high-emission climate projections.

Carbon Sequestration & Natural Capital

- Mitigate against the loss of green spaces and habitats, and seek to improve woodland, heathland and other habitats.
- Identify ways to ensure that biodiversity, carbon sequestration and amenity are all considered as part of land management strategies.
- Ensure ecological experts are involved in the writing of planning conditions (where relevant).
- Increase sequestration on Council-owned land (e.g. areas of greenspace including parks and gardens; linear parcels and green infrastructure such as verges and green spaces alongside roads; and the 'greening' of grey infrastructure in urban settings).

Sustainable Transport

- Enhance the provision of EV charge points.
- Collaborate with key market participants (e.g. WPD and the Government's Office for Low Emission Vehicles) to facilitate the transition to EVs .
- Keep informed of significant changes in hydrogen vehicle markets as they continue to develop.
- Co-locate PV canopies with existing or future parking provision.
- Ensure that the design and layout of developments will reduce reliance on private vehicles while promoting walking, cycling and public transport.

Additional Considerations for Lichfield

In order to meet the UK-wide 2050 target for reaching Net Zero emissions, Lichfield will need to (a) reduce energy demands from transport and buildings, (b) seek to increase the provision of local renewable energy as much as possible and (c) take actions to increase carbon removals from the atmosphere. Lichfield includes a significant area of Green Belt land along with a variety of other sensitive landscapes. Although these areas could potentially accommodate sensitively-designed renewable energy installations, they also offer significant opportunities to deliver environmental benefits through 'natural' climate solutions such as tree planting.

Our study has also identified that, based on the types of policy and environmental constraints set out in our Final Report, Lichfield includes a considerable amount of 'less constrained' land area, where there may be opportunities

for deployment of large-scale LZCs. Given the proximity to Tamworth Borough Council, which is highly restricted in this regard, if the Councils were considering establishing a carbon offset fund (to deliver either renewable energy or carbon sequestration projects) there may be an opportunity to coordinate resources.

The Preferred Options consultation for the Local Plan includes Strategic Policy OSC3 which would require major non-domestic developments to achieve a BREEAM 'Excellent' rating. The advantages of this approach are discussed in more detail in the Final Report. Due to the requirements of HCWS42, it is worth noting that in order to deliver wind energy within the District, suitable areas would need to be specified and mapped as part of the Local Plan.