

Appendix 3

Why Housing Retrofit Matters for Broxtowe

Borough emission data published by the Department for Energy Security and Net Zero shows that the Borough of Broxtowe emitted approximately 392 ktCO₂e in 2023 (**Figure 1**), a reduction of around 39% since 2005. Whilst transport remains the largest source of emissions at approximately 35% (**Figure 2**), domestic properties account for around 130 ktCO₂e per year, representing 33% of all Borough emissions, making housing the second largest source of emissions within the Borough. This demonstrates that the way homes are heated, powered and insulated has a significant influence on the Borough's overall carbon footprint and highlights the importance of improving the energy performance of existing homes.

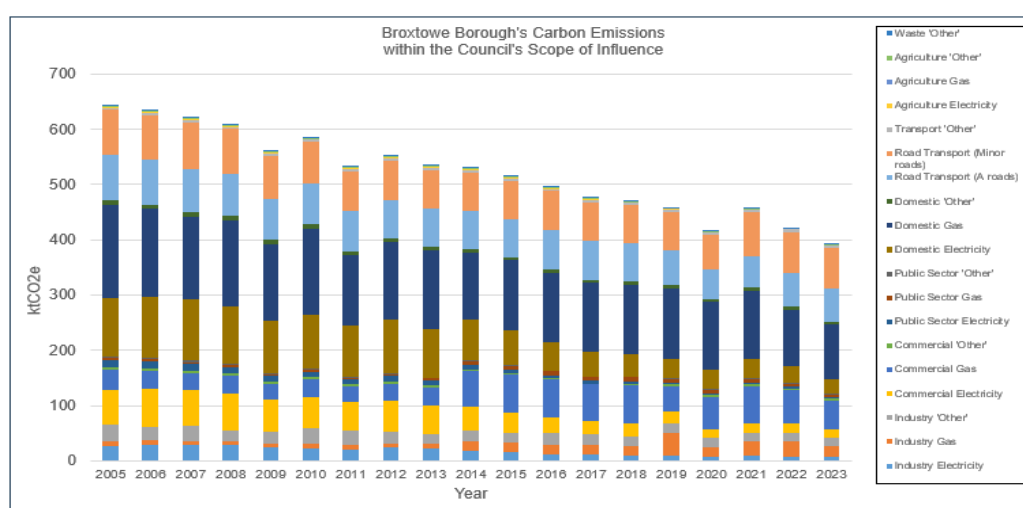


Figure 1: Broxtowe Borough's carbon emissions within the Council's scope of influence

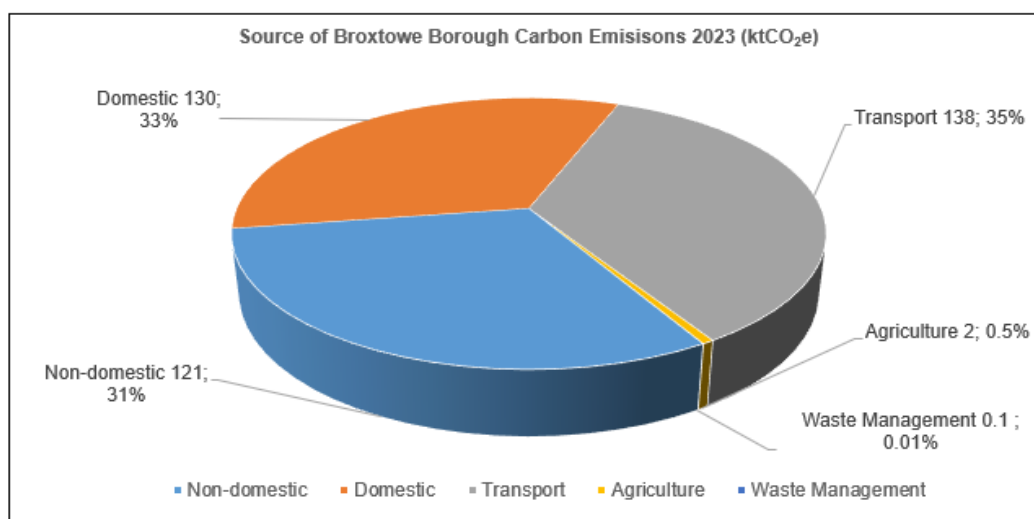


Figure 2: Source of carbon emissions for the Borough of Broxtowe 2023

Whilst new homes are increasingly being constructed to higher energy efficiency standards and are designed to incorporate low-carbon technologies from the outset, the majority of the homes that will exist in Broxtowe in 2050 have already been built. Many of these properties were constructed before modern energy efficiency standards were introduced and continue to rely on traditional heating systems and poorer performing building fabric. Improving the existing housing stock is therefore essential if the Council is to contribute towards the UK's legally binding target to achieve Net Zero carbon emissions by 2050 whilst also reducing fuel poverty, lowering household energy costs and improving residents' health and wellbeing.

University of Nottingham Housing Decarbonisation Roadmap

The University of Nottingham Housing Decarbonisation Report provides a sound evidence base for housing retrofit across the Borough. The study examined both private housing sector and the Council's own housing stock, identifying the property types most in need of intervention and assessing the costs, carbon savings and wider benefits associated with different retrofit approaches. The report concluded that a staged programme of retrofit, beginning with improvements to building fabric and followed by the installation of low-carbon heating technologies, provides the most practical and cost-effective route towards decarbonisation.

Across the wider Borough, the report identified that approximately 31,700 homes would benefit from some form of retrofit intervention. The analysis estimated that delivering a borough-wide retrofit programme, incorporating fabric improvements and low-carbon heating measures, would require investment in the region of £1.17 billion. Whilst this highlights the scale of the challenge facing the Borough's predominantly privately owned housing stock, the report concludes that such an investment could deliver significant reductions in carbon emissions, lower household energy bills and contribute towards reducing levels of fuel poverty across Broxtowe.

The report also provides a detailed assessment of the Borough's housing archetypes, recognising that different property types require different levels of retrofit investment. This information provides an important evidence base for future investment decisions, helping to identify those property types and locations where interventions can deliver the greatest benefits. It also supports the targeting of future funding opportunities and retrofit programmes towards homes where the need and potential impact are greatest.

Council Housing Stock

For the Council's housing stock, the University of Nottingham report modelled 2,929 properties, representing approximately 57% of the social housing stock at the time of the assessment. Using a traditional fabric-first methodology, combined with low-carbon heating technologies and renewable energy generation, the study estimated that a typical retrofit programme for these homes could require investment of approximately £90.6 million. This estimate included measures such as insulation improvements, air source heat pumps and solar photovoltaic systems designed to achieve significant carbon reductions and improve overall energy performance. It

should be noted that the report was completed in early 2026 and therefore reflects the EPC profile of the housing stock at that point in time. Since completion of the study, the Council has continued to undertake energy efficiency improvements and further EPC assessments across its housing portfolio, meaning that the current position may now differ from that presented within the report.

Whilst the report provides a useful indication of the scale of investment that may be required, the Council is adopting a more targeted and financially deliverable approach to improving the energy performance of its housing stock. Current government funding programmes provide support of up to £7,500 per property towards low-carbon heating installations, which across the modelled social housing stock could equate to funding of approximately £22 million, offsetting around 25% of the estimated £90.6 million investment requirement. Given ongoing funding constraints, the scale of the housing portfolio and the need to minimise disruption to tenants, the Council is developing a hybrid "fabric-light then systems" approach rather than pursuing a full deep-retrofit programme across all homes.

To support delivery, Nottingham City Council has been commissioned to undertake detailed EPC modelling across the Council's entire housing stock. This work will identify the most cost-effective route to achieving EPC Band C or above by 2030, in line with emerging national expectations for social and rented housing. The modelling will provide a property-level investment roadmap, detailed cost estimates, a phased delivery programme and information on properties where exemptions may apply (Where measures exceed the £10,000 cost cap, an exemption may be registered once all reasonable upgrades have been completed). This evidence will enable the Council to target investment towards those properties where the greatest EPC improvements can be achieved with the lowest cost and least disruption to residents

The Council's emerging retrofit strategy prioritises lower-cost, high-impact measures such as loft insulation, cavity wall insulation, heating system upgrades, solar photovoltaic panels, LED lighting and smart controls before considering more extensive interventions where necessary. Alongside the technical assessment, a prioritisation framework is being developed that considers tenant vulnerability, fuel poverty, deprivation levels, property condition and the suitability of homes for low-carbon technologies. This approach seeks to balance carbon reduction objectives with wider social outcomes, ensuring that investment is directed first towards those households most likely to benefit while maintaining progress towards achieving EPC Band C or above across the housing stock.

As part of this programme:

- 436 homes have either received or are scheduled to receive retrofit improvements between Wave 2.1 and planned programmes through 2027/28, representing over £5.2 million of investment.
- 2,606 council homes currently achieve EPC Band C or above.

- Approximately 1,700 homes are expected to be included in future retrofit investment programmes.
- The council has secured £2.59 million in external retrofit funding and investment to date.

Gedling, Broxtowe and Rushcliffe Local Area Energy Plan (LAEP)

The Local Area Energy Plan (LAEP) forms part of a wider suite of LAEPs being developed across the East Midlands under the strategic oversight of the East Midlands Combined County Authority (EMCCA). Whilst EMCCA provides the overarching framework and regional coordination, each individual LAEP remains subject to its own local governance and approval processes. The Broxtowe, Gedling and Rushcliffe LAEP is currently at draft final stage and is expected to progress to a formally adopted final version in the coming weeks, subject to agreement through the appropriate governance arrangements.

The LAEP builds on the housing evidence provided by the University of Nottingham report by taking a whole-system approach to decarbonisation. The LAEP considers not only homes, but also transport, energy generation, electricity networks, heat networks and wider infrastructure requirements. Developed through detailed digital modelling and spatial analysis, the study provides a long-term roadmap for achieving net zero across the three authorities whilst identifying investment priorities and infrastructure requirements.

The LAEP identifies that approximately 125,000 buildings across the three Boroughs require some form of retrofit intervention. The analysis demonstrates that reducing energy demand through fabric improvements is the critical first step in supporting the transition to low-carbon heating technologies and reducing overall strain on energy networks. The plan also identifies priority locations where poor energy performance, fuel poverty and other social factors coincide, enabling future programmes to be targeted towards the communities most likely to benefit from intervention. Within the Borough of Broxtowe, the report highlights:

- Eastwood Town
- Beeston Town
- Beeston North

These areas contain a higher concentration of older housing, lower energy efficiency and increased risk of fuel poverty, making them likely candidates for future external funding programmes and targeted engagement.

Importantly, the LAEP was developed using detailed neighbourhood modelling, allowing housing, energy use, emissions and infrastructure requirements to be analysed at a much more local level than Borough-wide averages alone. This provides a detailed understanding of where retrofit; fuel poverty interventions and energy infrastructure investment can deliver the greatest impact. The data has been

structured in a way that means it can continue to be used and adapted following Local Government Reorganisation, ensuring that the investment in developing the evidence base remains relevant and can continue to support strategic planning, retrofit delivery and infrastructure investment across Nottinghamshire.

Next Steps

Following completion of the governance process and formal publication of the final LAEP, the findings and recommendations will be reported back to Cabinet. This will provide Members with an opportunity to consider the finalised evidence base, its implications for future housing, energy and infrastructure planning, and how the Council can utilise the LAEP to support future funding bids, partnership working and delivery programmes.

East Midlands Combined Counties Retrofit Strategy

The East Midlands Combined Counties (EMCC) Retrofit Strategy provides the regional framework for delivering retrofit at scale across the East Midlands. Whilst the University of Nottingham report identifies what interventions are required and the LAEP identifies where they should be prioritised, the EMCC Retrofit Strategy focuses on how these ambitions can be delivered in practice.

The strategy adopts a whole-system approach to retrofit and seeks to improve energy efficiency, reduce fuel poverty, improve health outcomes and support economic growth. It recognises that successful retrofit delivery requires coordinated action across local authorities, housing providers, communities, supply chains, training providers and funding organisations. The strategy therefore focuses on six key themes: community engagement, skills and training, homes, low-carbon technologies, finance and governance.

Significantly, the strategy identifies retrofit as not only a carbon reduction measure but also a means of delivering wider social and economic benefits. These include reducing fuel poverty, improving health and wellbeing, creating skilled employment opportunities, strengthening local supply chains and supporting the development of a sustainable retrofit market. The strategy therefore provides an important delivery mechanism through which many of the recommendations arising from both the Housing Decarbonisation Report and the LAEP can be implemented.

Future Opportunities

Taken together, the University of Nottingham Housing Decarbonisation Report, the LAEP and the EMCC Retrofit Strategy provide a comprehensive evidence base for future retrofit activity across the Borough of Broxtowe. Each document serves a distinct but complementary purpose. The University of Nottingham report provides detailed housing analysis and retrofit pathways; the LAEP provides a place-based understanding of wider energy infrastructure requirements and identifies priority intervention areas; whilst the EMCC Retrofit Strategy establishes the delivery framework necessary to achieve retrofit at scale.

Collectively, these documents place the Council in a strong position to pursue future funding opportunities, target investment effectively and support residents through the transition to lower-carbon homes. They also ensure that, as Local Government Reorganisation progresses, a substantial body of evidence already exists which can continue to support strategic planning, inform future policy development and provide a robust foundation for improving housing quality, reducing fuel poverty and delivering carbon reduction benefits for residents across the Borough.