

Council Roadmap to Net Zero

Introduction

In 2019, Peterborough City Council declared a climate emergency, committing to become a net zero carbon organisation by 2030 and to supporting the Peterborough to become a net zero city.

In the years since this commitment was made, the global temperature has continued to rise, causing weather events such as heat waves, drought, and flooding to hit Peterborough and beyond with increasing frequency.

The target set in the Paris Agreement, to keep global warming to below 1.5 °C or 2 °C, demands urgent, focused action at global, national, local and organisational levels. In addition to its role in place-shaping, Peterborough City Council must continue to take a leadership role, by reducing its organisational emissions.

Purpose

This Roadmap to Net Zero is a key step in the council's journey to decarbonise. With a focus on our 2030 target, the roadmap outlines quantified steps the council intends to take to directly reduce its Carbon Footprint, while also proposing additional unquantified ways to reduce the remaining emissions.

Since 2018-19, the council has reported its Carbon Footprint each year and proposed actions to reduce emissions. The development of the roadmap will enable a more strategic direction for carbon reduction activities, ensuring that commitments and actions build towards a comprehensive programme of decarbonisation.

Significant progress has been made since the baseline year of 2018-19. Both quantifiable actions such as LED installations and purchases of electric vehicles and less measurable projects such as the introduction of carbon literacy training, alongside electricity grid decarbonisation, have contributed to a decrease of approximately 28.6% of CO₂e emissions between the baseline year and 2022-23.

However, substantial work remains to cut the council's remaining emissions to net zero by 2030. This roadmap will outline the pathways the council can take to achieve this target, taking early and ambitious action to ensure substantial and rewarding long-term impact.

Peterborough City Council Corporate Strategy

The council's Corporate Strategy guides all its programmes and activities. Tackling climate change, as a highly crosscutting issue, is relevant across all four of the council's priority areas. The effects of climate change impact our communities in countless intersecting ways, but so do the benefits of taking climate action.



Figure 1: Peterborough City Council's Corporate Strategy Wheel

Prevention, Independence & Resilience

The impacts of climate change are known to disproportionately affect the most vulnerable individuals and communities ¹. Conversely, measures to reduce carbon emissions have numerous co-benefits.

Our Places & Communities

Climate change has a striking impact on health, affecting diets, air quality, temperature, damp environments, and more. Pursuing net zero prioritises the resilience of communities and services, supporting health outcomes, cultural assets, and community cohesion.

Climate action in the workplace can have a number of health co-benefits, ranging from reduced air pollution to better-insulated workplaces to increases in healthy behaviours such as active travel on commutes.

The Economy & Inclusive Growth

The council's net zero journey can show leadership to other organisations in the city, encouraging city-wide decarbonisation. Ensuring the council's buildings are well insulated and comfortable will ensure these public places are attractive and vibrant both now and in the future.

Sustainable Future City Council

Being a leader in the net zero journey and being open about the steps we will need to take, are both essential in our commitment to transparency as an organisation. Early action towards net zero is vital in ensuring we can deliver on our priorities now and in the future, and while it will require upfront investment, there are many actions that will reduce our annual energy costs.

¹ Sahoo, G. *et al.* (2023). Impact of Climate Change on Livelihood Security and Biodiversity – Issues and Mitigation Strategies

Though the council's own emissions comprise only a small proportion of the city's overall emissions, the net zero goal helps to future-proof services, making them more resilient, and living up to our promise to support our most vulnerable residents.

Methodology and scope

Defining Net Zero

In 2019, Peterborough City Council declared a climate emergency, committing to becoming a net zero organisation by 2030.

Net zero is the state in which CO₂e captured is greater than or equal to the emissions produced. This can be measured at the organisational or area level.

Peterborough City Council's approach to pursuing net zero puts primary emphasis on emissions reduction. The council is supportive of carbon capture, primarily through nature-based solutions, but would only reduce the council's carbon footprint through the use of accredited carbon credit schemes. The council does not currently utilise offsets, but may consider their use once initial carbon reduction work has been completed.

Scope 1, 2 and 3 emissions

Greenhouse gas emissions are commonly divided into three 'scopes'.

Scope 1 emissions are produced directly and on-site, such as in the use of gas for heating or diesel in vehicles.

Scope 2 emissions are emissions associated with purchased energy generated offsite, such as in the use of electricity from the national grid.

Scope 3 emissions cover all other indirect emissions produced both upstream and downstream of the organisation. This scope covers emissions from purchased goods and services, waste, business travel, and beyond.

Operational Boundaries

The council's organisational boundary determines which functions and activities are accounted for in its Carbon Footprint. While a complex organisational structure makes defining these boundaries difficult, the council's approach is based on operational control. Activities and buildings in which the council or its wholly owned organisations are in control of will contribute to the Carbon Footprint.

This approach has led the council to now differentiate between two variations of its carbon footprint: the emissions it has control over (its Carbon Footprint) and the emissions over which it has influence but not control (its Carbon Footprint Plus). This is an approach taken by other public sector organisations².

²[Greener NHS » Delivering a net zero NHS \(england.nhs.uk\)](https://www.england.nhs.uk/greener-nhs/delivering-a-net-zero-nhs/)

Carbon Footprint

The council's Carbon Footprint includes emissions from its direct operations. This includes emissions from council operated buildings, vehicle fleet, business travel, infrastructure, and waste from council operated facilities. Although the accuracy of measurement is constantly improving, these emissions are measurable and reductions can be quantified.

The Carbon Footprint also includes emissions from the council's wholly owned subsidiaries, such as Peterborough Limited, which operates culture and leisure facilities, waste collection, street scene, green space services, and property maintenance amongst other services.

Carbon Footprint Plus

The emissions from the goods and services that the council purchases and emissions from buildings that we own but do not operate contribute to the council's Carbon Footprint Plus. This data is not collected consistently across all contracts therefore the Carbon Footprint Plus is incomplete.

Work is ongoing to enable increased and more accurate measurement of these emissions, so the council's Carbon Footprint Plus emissions are likely to rise in future years as data collection improves. Although this roadmap includes activities to reduce the Carbon Footprint Plus as well as the Carbon Footprint, it does not set quantified reduction targets for the Footprint Plus due to unavailability of the full picture. The roadmap focuses on the target of a Net Zero Carbon Footprint by 2030. This is an approach similar to that taken at other local authorities.

This approach sets clear targets for the Carbon Footprint and therefore will enable more accurate monitoring of decarbonisation.

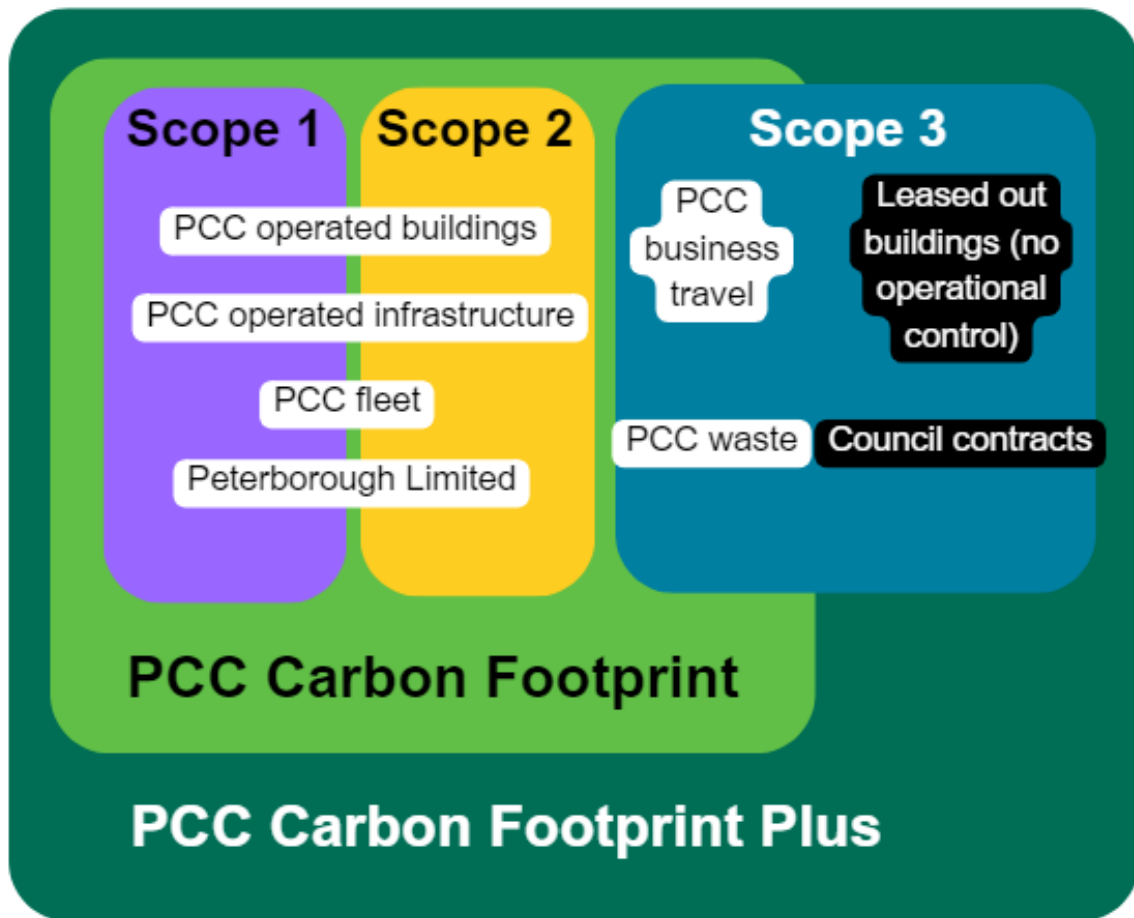


Figure 2: PCC operational boundaries

Baseline & current emissions – overview

Peterborough City Council emissions

Peterborough City Council calculated its baseline Carbon Footprint for the financial year 2018/19, where it was responsible for 11,015 tonnes CO₂e. In the years since, council emissions have steadily declined. The exception to this was the small increase seen in 2021/22 due to a return to usual activities after the most significant disruption of the pandemic had led to a significant drop in the prior reporting year. In the most recent reporting year of 2022-23, the council emitted 7,888 tonnes CO₂e. This figure has been revised as further data has become available.

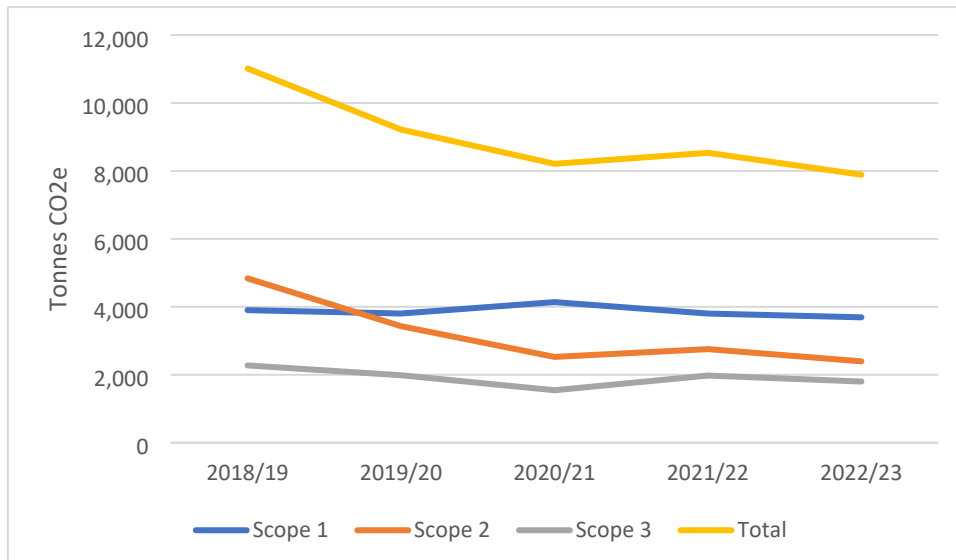


Figure 3: PCC Carbon Footprint 2018-2023 by scope

Between 2018/19 and 2022/23, emissions reduced by 28.6%, which amounts to a difference of 2,143 tonnes CO₂e.

Figure 4 illustrates the distribution of council emissions by category.

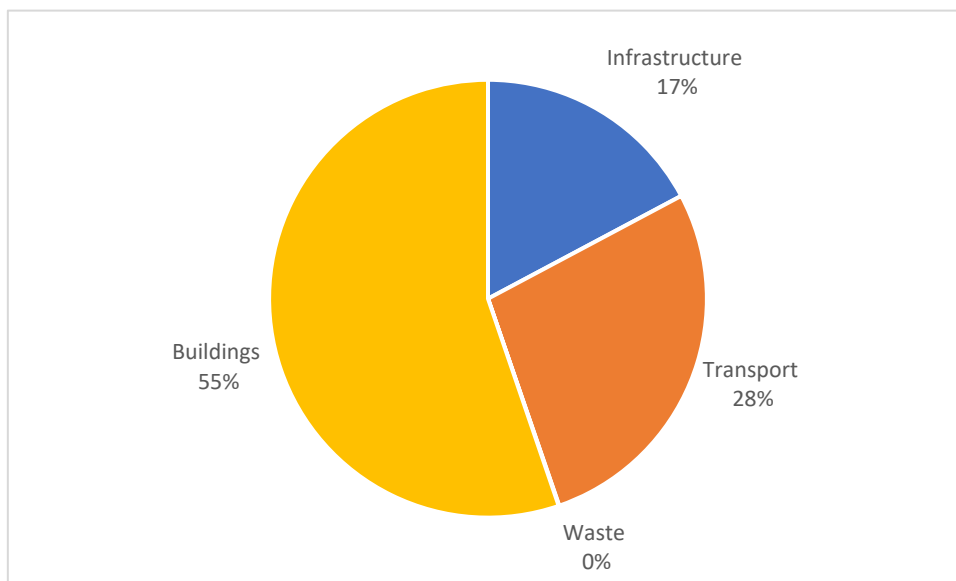


Figure 4: 2022-23 PCC Carbon Footprint by emissions category

Buildings account for a substantial majority of the council’s emissions with 55% of overall emissions, followed by transport at 28% and infrastructure (such as street lighting and feeder pillars) at 17%.

Looking at the distribution of fuel use can also inform pathways to decarbonisation. 41% of 2022/23 council emissions came from electricity, while 31% came from gas, 25% from diesel, and 3% from fuel use in the grey fleet (employees’ vehicles used for business travel and reported through mileage claims). The national grid is projected to decarbonise by approximately 68% by 2030 and by 98% by 2050, meaning that electricity emissions will be substantially decreased even with consistent or raised levels of usage.

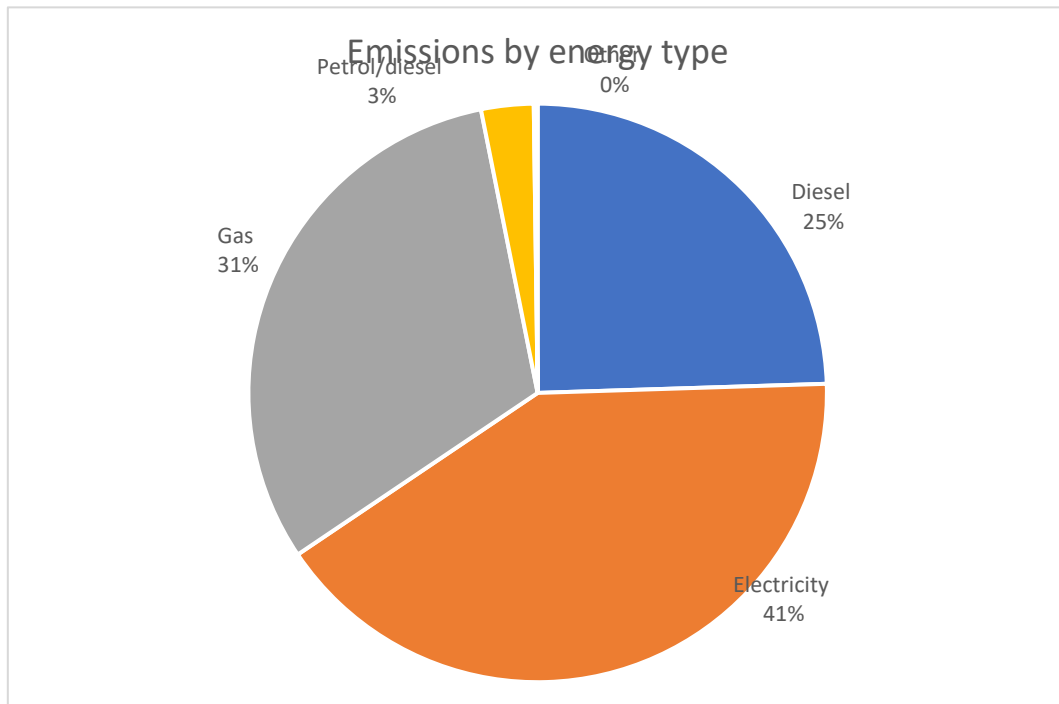


Figure 5: 2022-23 PCC Carbon Footprint by fuel type

Decarbonising council buildings will necessitate a move away from gas, often towards electric powered heat pumps, or in some cases connections to a heat network. The highly emitting diesel use highlights the need to decarbonise the council and Peterborough Limited’s fleet. Use of biodiesel and replacement with electric vehicles where possible will begin to address these emissions.

	Total emissions (tonnes CO2e)	Percentage of total emissions
PCC	3817.0	48.4%
Infrastructure	1358.2	17.2%
Transport	326.2	4.1%
Waste	3.2	0.0%

Buildings	2129.4	27.0%
Peterborough Limited	4071.0	51.6%
Transport	1843.6	23.4%
Buildings	2227.4	28.2%
Total	7888.0	100.0%

The distribution of emissions by operator illustrates the importance of working closely with Peterborough Limited in reducing emissions, as approximately half of emissions falls within this remit. For the remainder of the document all emissions will be referred to as the council’s.

This roadmap will consider each emissions category in turn, laying out a strategic approach to reducing emissions in each area and then considering overarching measures and aspects such as behavioural change, finance, and carbon capture.

Buildings

Building emissions account for approximately 55% of the council’s Carbon Footprint, making this a central area of focus for the roadmap to net zero.

Buildings emissions

In 2022/23, 4,357 tonnes CO₂e of the council’s emissions came from buildings. Figure 6 shows how emissions are distributed by building type.

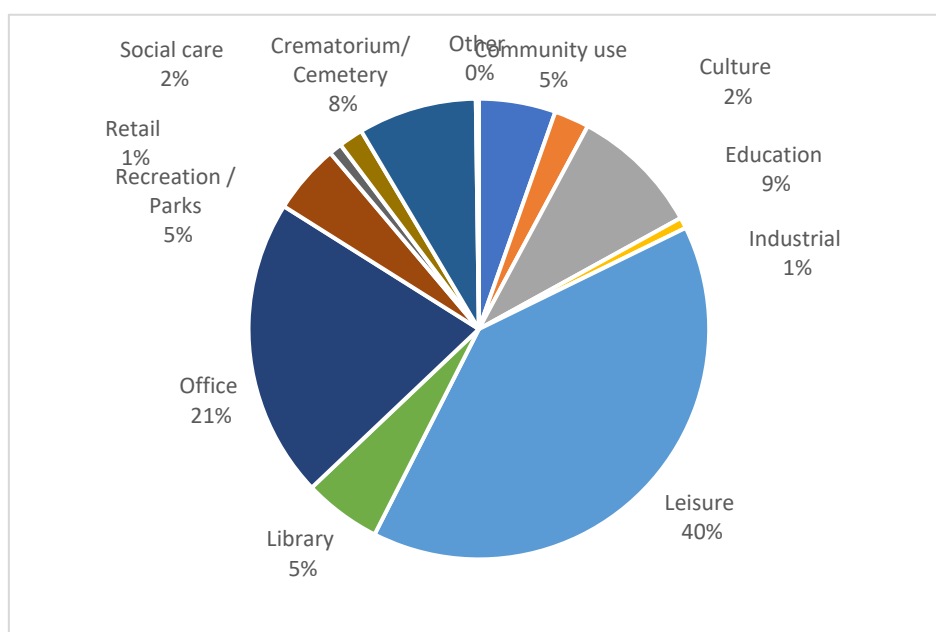


Figure 6: 2022-23 building emissions by category

Leisure facilities are the largest carbon emitter of the council's buildings and account for 40% of the council's overall building emissions, while offices account for 21%, the second largest category.

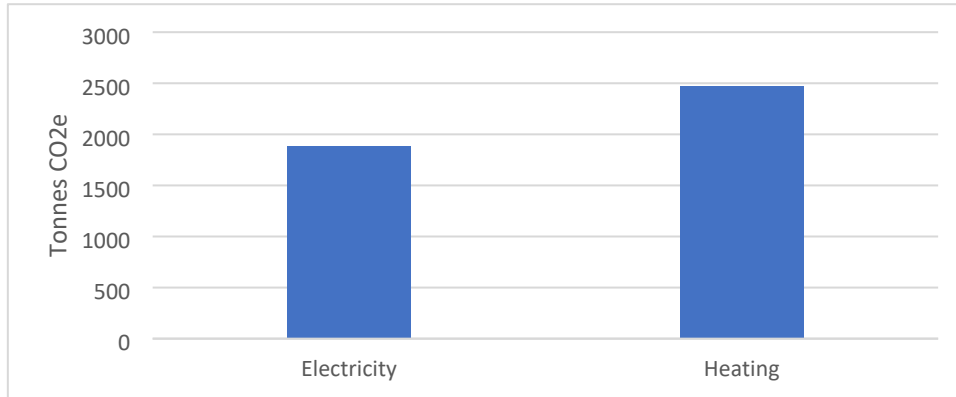


Figure 7: 2022-23 building emissions by fuel type

Approximately 57% of the council's building emissions come from fossil fuel heating usage, while 43% come from electricity. This makes the decarbonisation of heating in buildings, replacing fossil fuel usage with electricity which will gradually decarbonise, a high priority.

Strategic Approach

Emissions reductions in buildings will typically follow a phased approach which allows for maximalisation of each measure's efficacy. Figure 8 explains this sequence of prioritisation.

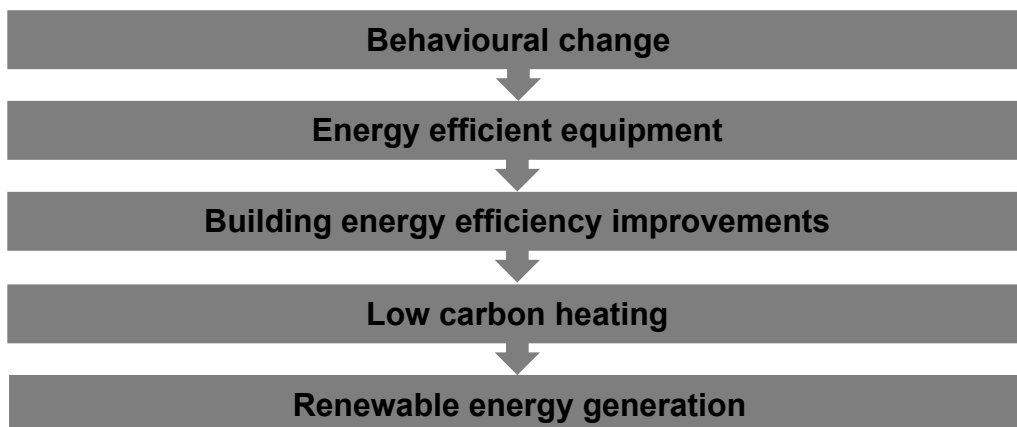


Figure 8: Strategic approach to buildings retrofitting

The strategic approach ensures that upgrades to building fabric such as insulation is made ahead of installation of low carbon heating. This ensures maximum cost efficiency. Different buildings may go

through this process at different points in time, but following this approach for each site. The installation of energy efficiency measures and low carbon heating will be considered against the council's maintenance schedules.

This strategic approach to retrofitting will be complemented by a carbon-informed buildings acquisition and disposal strategy.

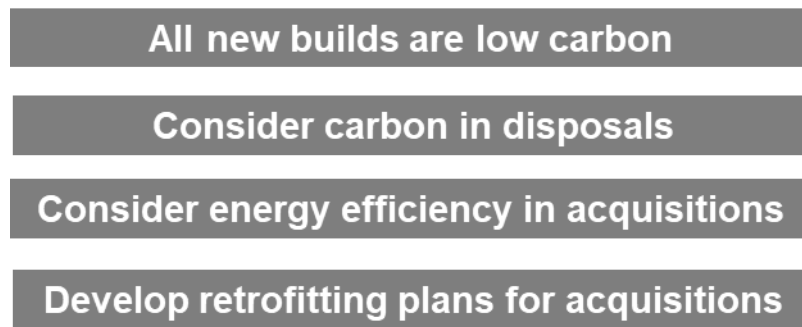


Figure 9: Strategic approach to building acquisitions and disposals

The construction and demolition of buildings are carbon intensive processes, but they can be done in a carbon-conscious way. This strategy does not constrain acquisition or disposal processes, but aims to ensure that consideration to council and city-wide emissions, such as supporting low-carbon building and retrofitting when possible, is given.

Heat decarbonisation

Over half of the council's building emissions come from just 18 buildings. Funding was previously secured from the Low Carbon Skills Fund (provided by Salix Finance) to develop heat decarbonisation plans for these buildings, which propose staged decarbonisation measures in line with the strategic approach outlined in figure 8.

Implementing all measures recommended in these heat decarbonisation plans would yield an annual carbon reduction of approximately 1,206 tonnes CO₂e, or 27% of council building emissions.

Some additional heat decarbonisation plans have been developed for buildings owned but not operated by the council. The emissions associated with these buildings fall into the Carbon Footprint Plus.

Peterborough Integrated Renewables Infrastructure (PIRI)

PIRI aims to combine a next generation heat network, electricity network and EV infrastructure into one holistic scheme aimed at contributing to carbon reduction while reducing energy bills. PIRI brings together energy generation, demand and storage, unlocking efficiencies not deliverable under

traditional energy systems, and serving as a blueprint for other cities. PIRI will provide electricity and heating to several council buildings.

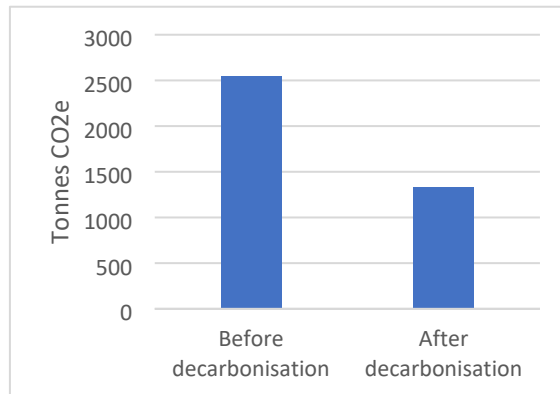


Figure 10: Anticipated emissions of 18 carbon-intensive buildings before and after heat decarbonisation measures

Work to develop decarbonisation strategies for remaining PCC operated buildings is ongoing and is likely to enable further reductions, but these cannot be quantified currently.

Measuring emissions reductions

Figure 11 illustrates the expected buildings emissions reductions from the measures recommended in this roadmap.

Through the electrification of heating, the council’s gas use will decrease, whilst the electricity use will increase. As the grid is expected to substantially decarbonise over the next few years, even with an increase in electricity usage, the council will see lower emissions overall.

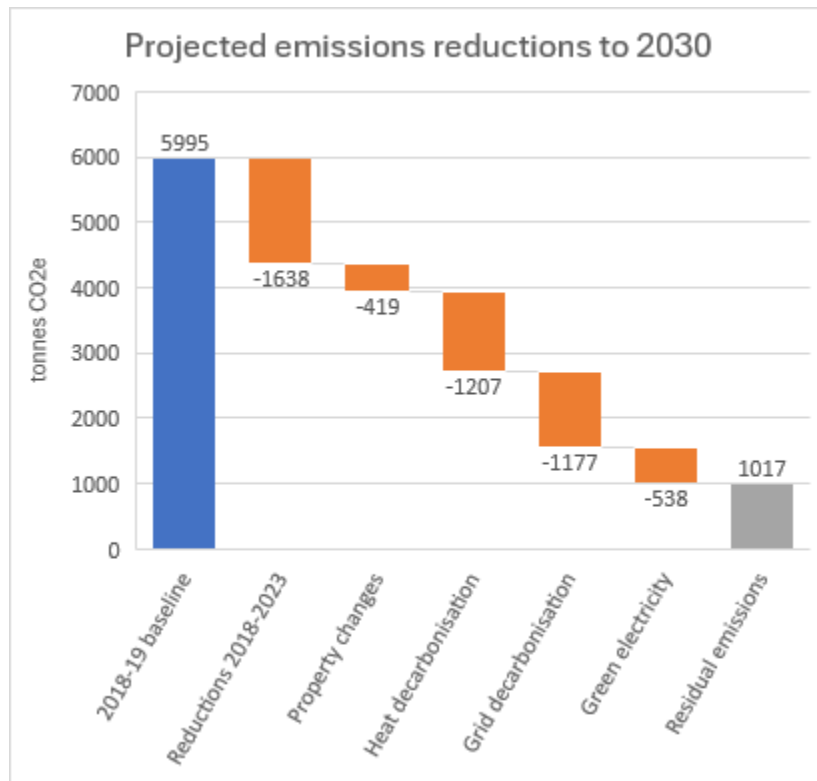


Figure 11: Anticipated building emissions reductions by 2030

Action	Cost	Estimated annual CO2 e savings (tonnes)	Estimated annual energy savings (kWh)	Co-benefits
Detailed designs for heating systems	£££	N/A	N/A	N/A
Loft insulation/roof replacement	££££	37	173,000	Reduced heating costs; increased building resilience from moisture control
Wall insulation	££££	52	245,300	Reduced heating costs; increased building resilience from

				moisture control
Window replacement	££££	23	110,800	Reduced heating costs; increased building resilience from moisture control
Door replacement	£££	6	29,450	Reduced heating costs; increased building resilience from moisture control
Wash basin flow reducers	£	0.2	700	Water use reduction
Deaerated shower heads	£	1	4500	Water use reduction
PIRI connections	£££	510	1,693,600	Reduced heating costs; increased building resilience from moisture control; health benefits from air quality improvements
Other low-carbon heating	££££	277	2,403,550	Reduced heating costs; increased building resilience from moisture control; health benefits from air quality improvements
Automatic lighting	£££	12	45,650	Financial savings

LED lighting	££££	56	204,900	Financial savings
Solar PV	££££	137	494,850	Income generation and reduced electricity costs
Roof lights	£££	2	11,850	Financial savings
Submetering	£££	59	256,800	Financial savings
Solar thermal	££	3	17,600	
Adjusting controls	££	17	81,500	Financial savings
Total	£££££	1,206	5,774,398	

£ = £0-£1,000; ££=£10,000-£99,999; £££=£100,000-£999,999;
££££=£1,000,000-£9,999,999; £££££= over £10,000,000

Addressing residual building emissions

Action	Co-benefits
Development of heat decarbonisation plans for remaining properties	Enables further planning of the programme
Ensuring low-carbon building materials and design in development projects	Supporting supply chains to decarbonise, reduces needs for more costly retrofitting in the future
Ongoing energy efficiency improvement as appropriate	Financial savings through reduced energy use
Carbon-informed buildings acquisition and disposal strategy	Enables further planning of the programme

Work with Business Intelligence teams to improve data collection capabilities

Potential identification of business efficiencies

Infrastructure

In 2022-23, infrastructure accounted for 17% of council emissions, or a total of 1,358 tonnes of CO₂e. The infrastructure category includes uses such as street lighting, feeder pillars, pumping stations, infrastructure in car parks like parking meters or charging stations and more.

Infrastructure emissions

Out of the operations grouped under infrastructure, street lighting comprises 83% of the energy use, making it the greatest energy user in this sector.

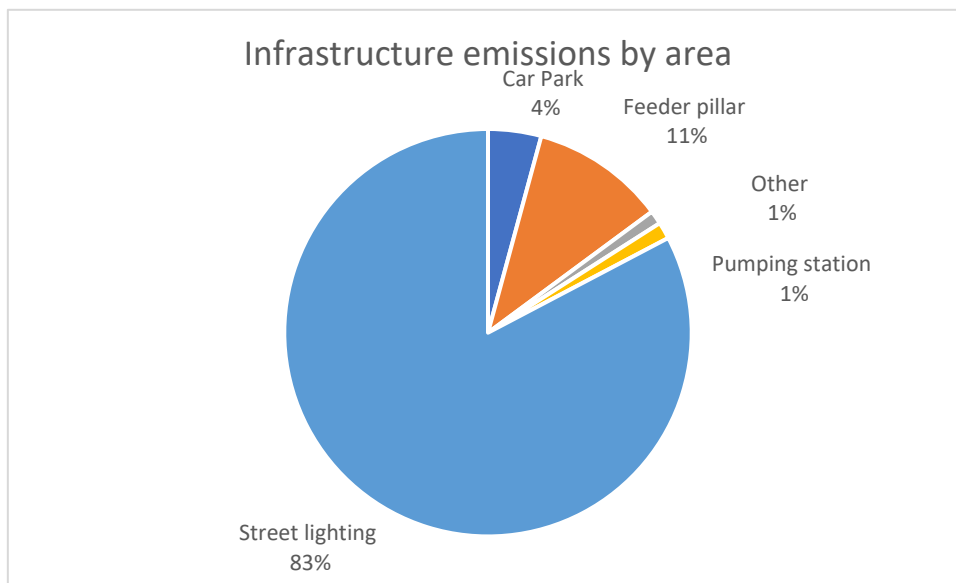


Figure 12: 2022-23 infrastructure emissions by area

Notably, all energy used within this sector is electricity. As the national grid is projected to decarbonise by approximately 68% by 2030 and 98% by 2050, these emissions are expected to substantially decrease, in alignment with this change.

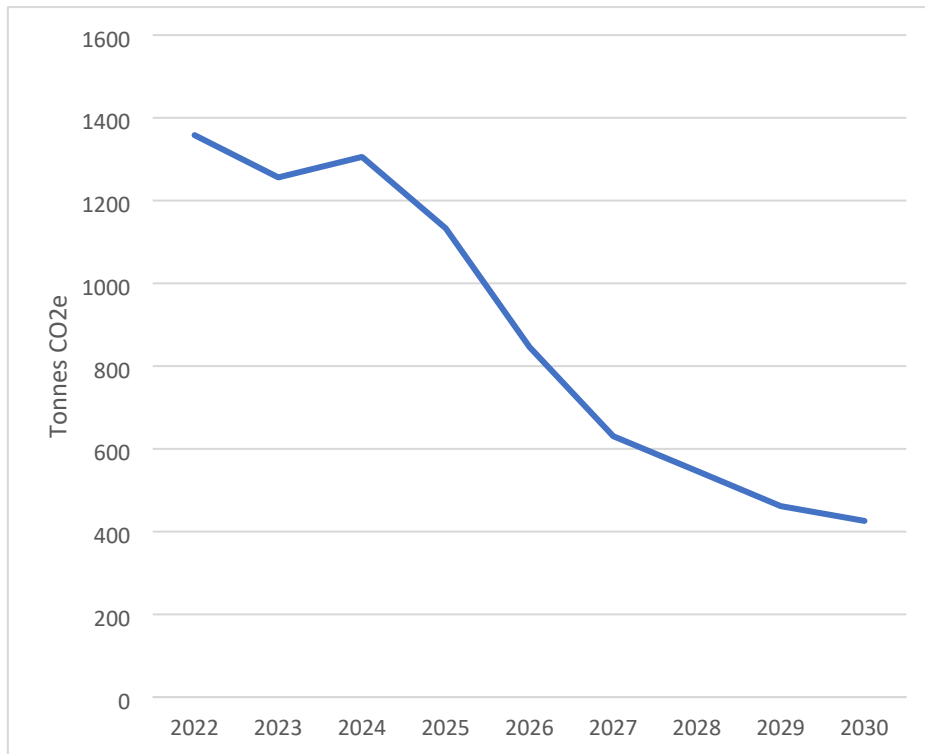


Figure 13: Anticipated infrastructure emissions reductions to 2030

Strategic Approach

Extensive energy efficiency improvements have already been implemented in the council’s infrastructure, and as such this is a model area for the council. The strategic approach can be summarised as follows:

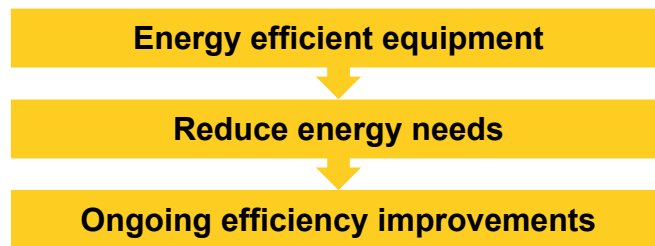


Figure 14: Strategic approach to infrastructure emissions

This approach prioritises the most effective measures (equipment upgrades, such as LED lighting) while ensuring that any energy requirements reductions will be as effective as possible. Given that street lighting is disproportionately responsible for the council’s infrastructure energy usage, this area is explored here as a case study.

Energy efficiency measures

Over 95% of Peterborough City Council’s street lights now have LED lanterns. Initial LED upgrades began in 2012; however, the biggest impact was experienced in 2016 with the start of a three year project to convert remaining street lights, approximately 17,000 units, over a three year period.

There are a very small number of units that, for varying reasons, still have older lanterns, however, newly adopted assets and existing asset upgrades are now required to be LEDs, ensuring the continued energy efficiency of Peterborough City Council's street lighting inventory.

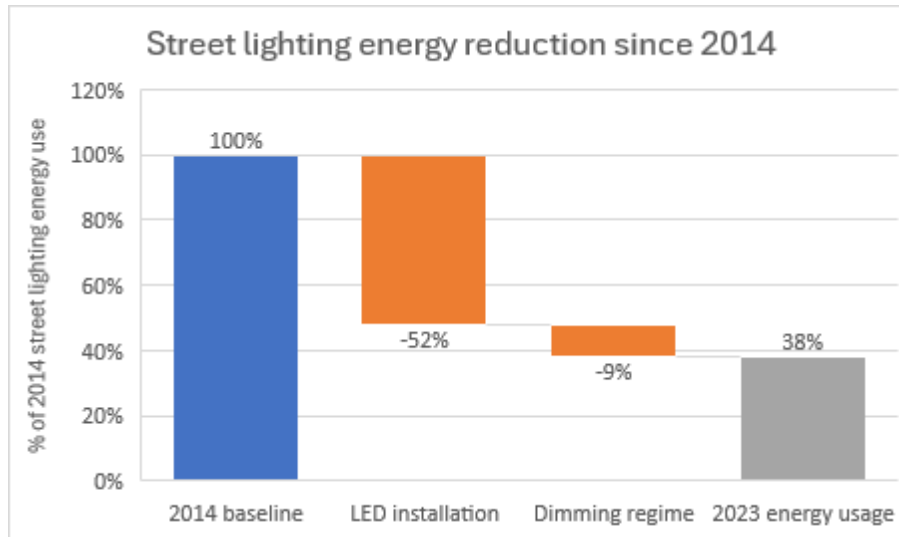


Figure 15: Estimated energy reduction in street lighting from 2014-2023

The completion of the major upgrade has seen energy consumption reduce by approximately 52% when comparing 2014 and 2023 data. The upgrades are estimated to now save at least 1,253 tonnes of CO₂e annually compared to the old lighting infrastructure.

Energy reduction measures

While the most significant savings in street lighting energy come from LED upgrades, additional savings are being made through dimming lights.

Lights are subject to dimming regimes, whilst maintaining illumination levels in line with British Standards, between the hours of 9pm and 5am.

Dimming lights has reduced street lighting energy use by approximately a further 19%, which now saves around 336 tonnes of CO₂e annually, after accounting for the impact of LEDs.

Measuring emissions reductions

As this sector is powered entirely by electricity, it will see a significant decrease of emissions over time due to decarbonisation of the national grid. While some residual emissions remain by 2030, they will continually reduce as the grid continues to decarbonise to near net zero by 2050.

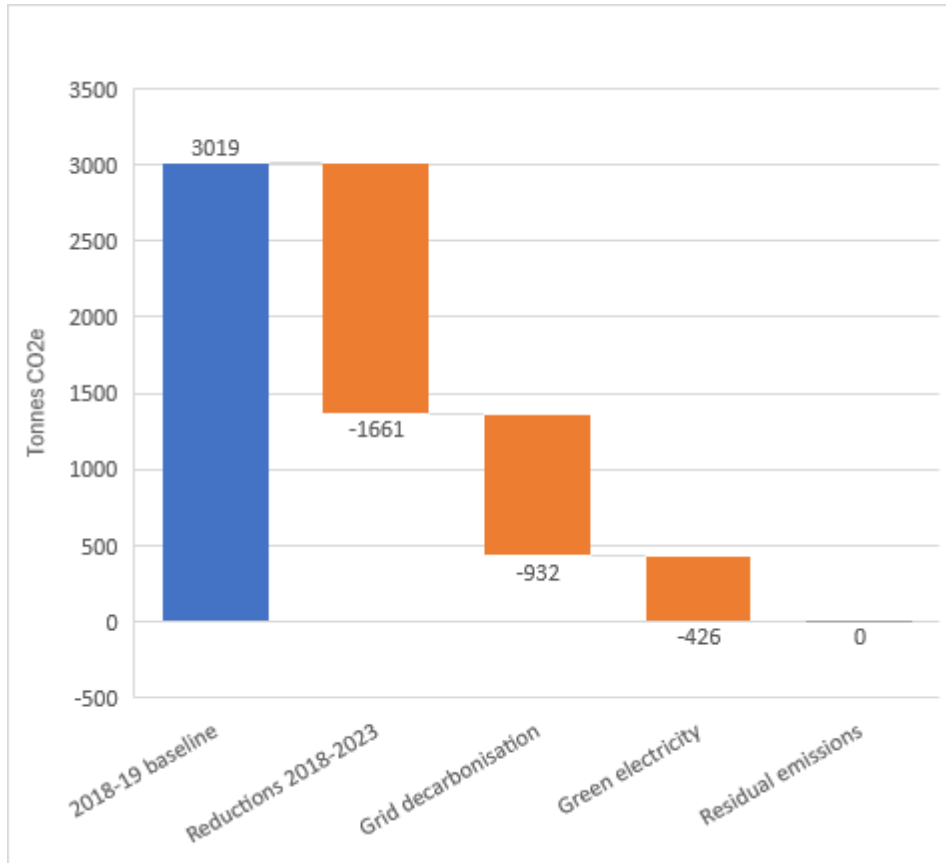


Figure 16: Anticipated infrastructure emissions reductions by 2030

Addressing residual emissions

Action	Co-benefits
Identify lighting in parks that could be replaced with LEDs	Financial savings through reduced energy use
Explore motion activated lighting in car parks	Financial savings through reduced energy use

Transport

Transport-related emissions, including fleet and business travel, are responsible for 27% of the council's carbon footprint, making transport another area of high priority.

Transport emissions

The vast majority of transport emissions (90%) come from the council fleet, much of which is operated by Peterborough Limited. The remaining transport emissions (10%) are associated with business travel (mileage, public transport expenses, and hotel stays).

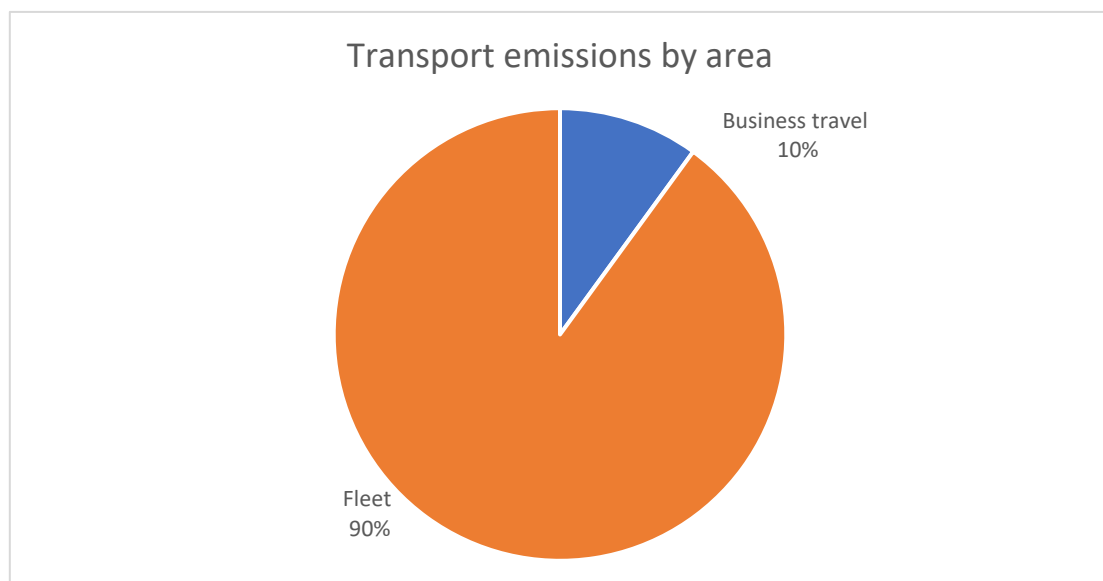


Figure 17: 2022-23 transport emissions by area

Fleet emissions

Over half of the fleet's emissions can be attributed to refuse vehicles. A further quarter comes from street cleaning vehicles. This makes these categories of vehicles a high priority in investigating decarbonisation possibilities.

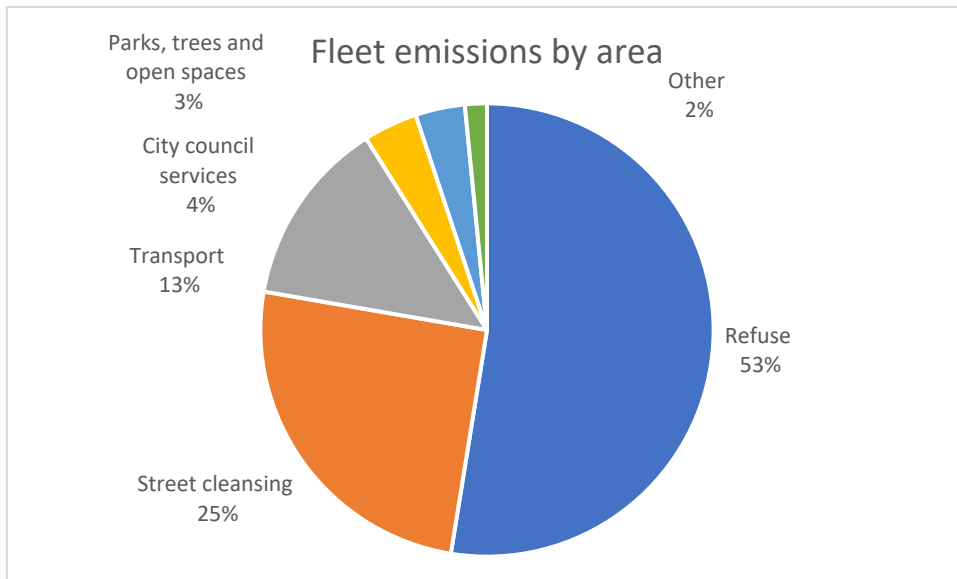


Figure 18: Fleet emissions by area

Although suitable electric vehicles are not yet available or fully practical as replacement vehicles, decarbonisation of the fleet remains a key component of this roadmap, and transitional fuels, combined with long-term strategy, will help to reduce these emissions in the shorter term.

Business travel

The vast majority of council business travel emissions are from mileage undertaken on council business in private cars. Currently, data on this mileage, as well as other forms of business travel, is significantly limited.

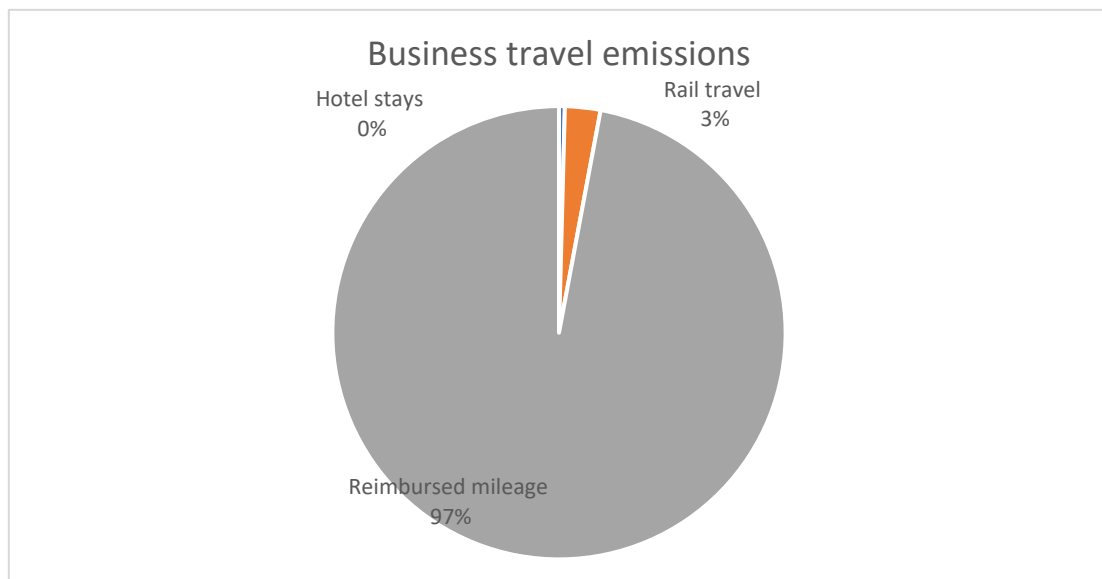


Figure 19: 2022-23 business travel emissions by area

The climate team will work with council services to identify opportunities to reduce transport needs and associated emissions. Work to improve business travel data collection is also in progress, as this will offer key information to help further reduce emissions.

Strategic approach

The strategic approach to reducing transport emissions is based on the principles of the transport hierarchy, while acknowledging the limits of current electric vehicle capacity and the embodied carbon associated with vehicle production.

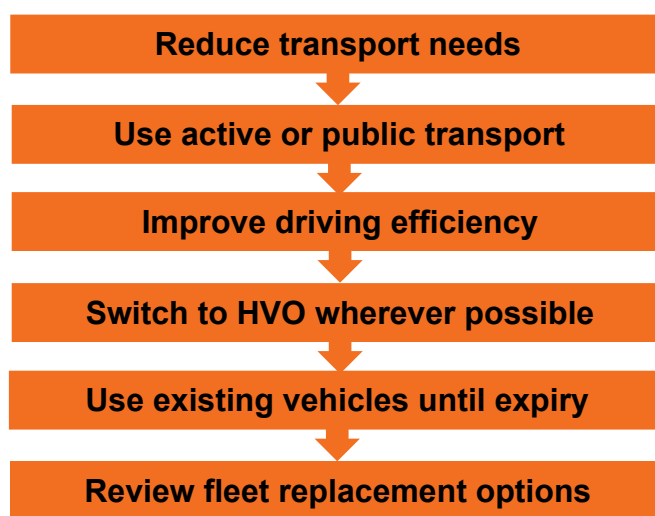


Figure 20: Strategic approach to transport emissions

There is a significant carbon footprint associated with the production of new vehicles, therefore vehicles should be used for their lifespan to not cause additional demand for production. HVO is a biodiesel which can be used within vehicles which utilise diesel, without a need for replacement or cleaning the fuel system. HVO represents a 90% reduction in emissions in comparison with diesel use. As much of the fleet is due to expire around 2030, a switch to HVO for all compatible vehicles will be pursued. When vehicles are due for replacement, low carbon alternatives will be sought. Currently there are vehicles for which there is no suitable electric version, but this will be revisited ahead of the replacement date, with new innovations expected. Should a low carbon alternative not be viable when a replacement is due, HVO will be considered for long-term use.

Air travel policy

Although there is limited air travel by council staff, a policy to limit air travel to when only strictly necessary, as deemed by the senior leadership team will be proposed.

Case study: HVO transition

HVO (Hydrotreated Vegetable Oil) is a renewable diesel fuel derived from feedstocks such as vegetable oils, animal fats and waste oils. The use of HVO fuel compared to diesel has several environmental benefits, including a reduction in greenhouse gas emissions and a lower level of emitted pollutants. Only provisions of storage tank for the HVO are required as modification.

Peterborough Highway Services utilise HVO in the majority of its fleet and some of the plant used in maintaining the highways infrastructure. In 2019, 35% of its carbon emissions were attributed to fuel (direct use and supply chain). Trials of HVO began in 2019 with a full roll out to all contracts between 2021 and 2022. In Peterborough, the use of HVO in since 2022 has saved around 239 tonnes CO₂e, which is accounted for in the Carbon Footprint Plus.



Figure 21: Image of HVO fuelled highways vehicles

Travel Hierarchy Policy

The council will aim to ensure that all capital projects follow the travel hierarchy, ensuring that staff and visitors are supported to walk, wheel and cycle ahead of driving. Examples of this may include providing cycle storage instead of a car parking bay.

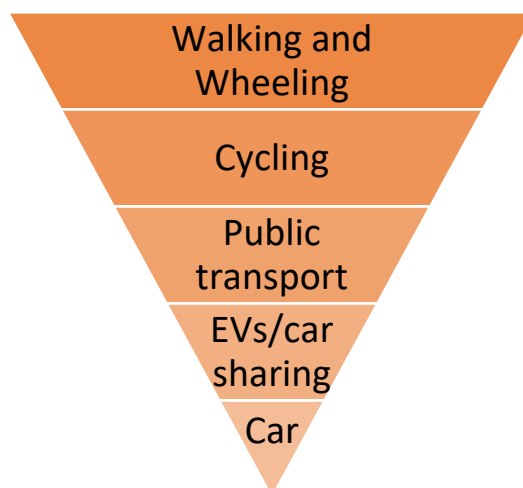


Figure 22: Travel Hierarchy

Measuring emissions reductions

Figure 23 shows the estimated emissions reductions from switching to HVO (hydrotreated vegetable oil, a low-carbon diesel alternative), estimating that approximately 50% of the council’s diesel usage can be switched over to HVO.

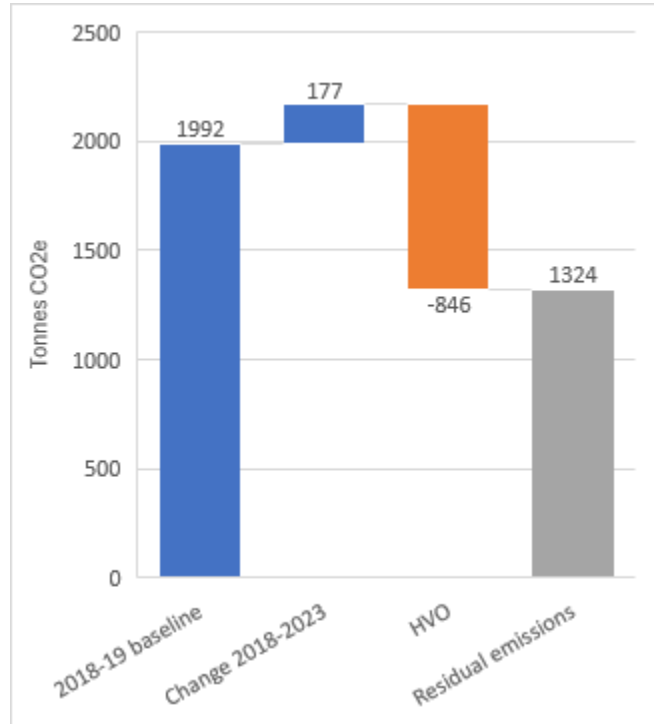


Figure 23: Anticipated transport emissions reductions by 2030

Action	Cost	Estimated annual CO ₂ e savings (tonnes)	Co-benefits
Switch from diesel to HVO where possible	£££ (annually)	846	Reduced air pollution

Reducing residual emissions

Action	Co-benefits
Review warranties of existing vehicles for their compatibility with HVO	Reduced air pollution
Replace expired vehicles with electric where appropriate and possible, and replace with vehicles which allow the use of HVO within warranty if not.	Reduced air pollution
Route modification and schedule planning for staff that travel in their roles	Financial savings, reduced traffic; reduced air pollution; time savings
Driver efficiency training	Financial savings, professional development
Active travel engagement campaign for staff	Reduced air pollution; health benefits from increased physical activity
Reduce staff travel required for council operations	Financial savings; reduced air pollution; potential health benefits; time savings
Work with Business Intelligence teams to improve data collection capabilities	Potential identification of business efficiencies

Waste

Waste emissions

Waste emissions from council-operated buildings amount to approximately 0.4% of the council's Carbon Footprint, with 82% of this waste coming from residual (or non-recycled) waste.

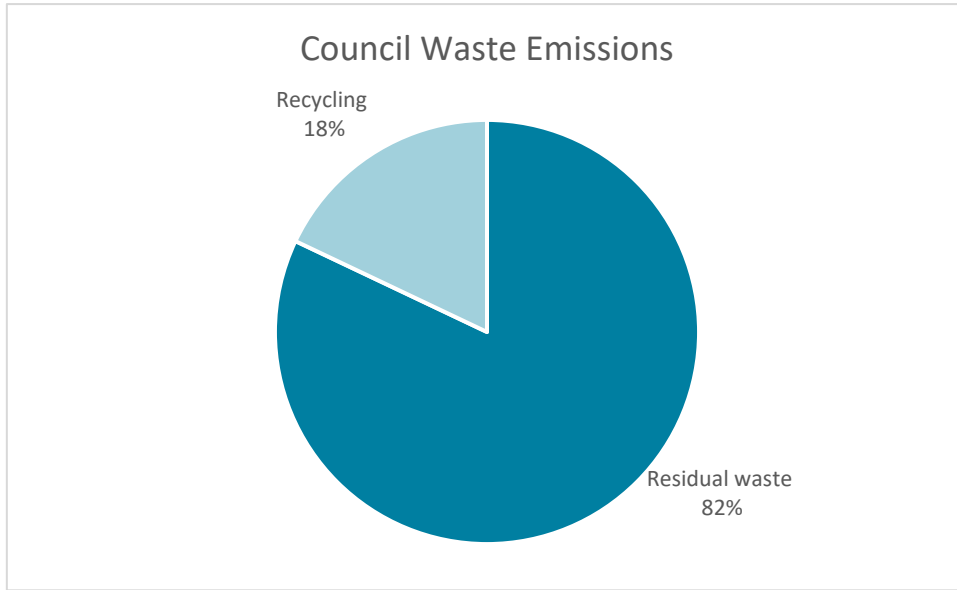


Figure 24: Categories of council waste emissions

Waste hierarchy

Good waste management practices begin with avoiding the production of waste in the first place. The waste hierarchy guides the prioritisation of waste reduction, moving from prevention, to reuse and recycling, and finally to methods of disposal. Following this hierarchy helps to reduce unnecessary emissions from producing goods.

Current activities

There are several ways in which staff at council buildings can reduce their waste production.

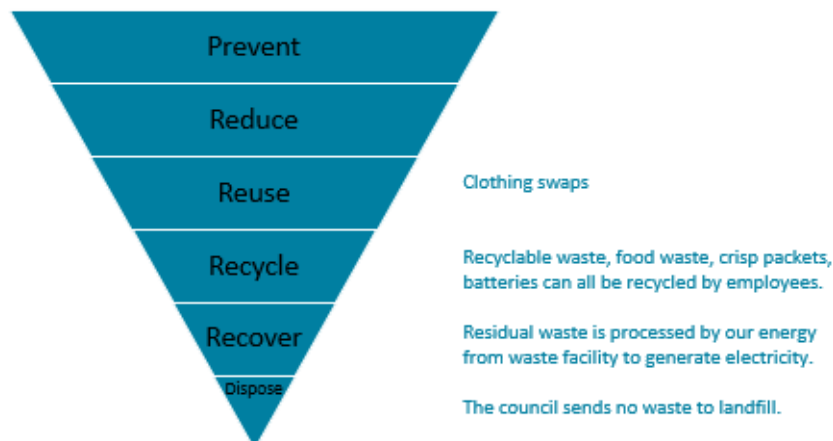


Figure 25: Waste hierarchy

Waste hierarchy policy

The council will aim to ensure that all capital projects follow the waste hierarchy, ensuring that staff and visitors are supported to re-use and recycle ahead of putting waste into a non-recycled bin.

Strategic approach

Whilst the council will endeavour to reduce its own waste emissions, there is a much more significant opportunity to impact the city's waste emissions through a strong engagement campaign.

Through the work supporting staff to reduce, re-use and recycle, the council will learn how best to support our residents and local employers to do the same, and this will help inform outward engagement campaigns. The council will regularly review how each measure supports employee education and successfully encourages recycling, to continually improve the information and messages provided to local communities.



Figure 26: Strategic approach to waste emissions

Many staff also live in the local area and therefore are likely to transfer the good practice they learn at work to their home lives

Case study: Recycling education team

The recycling education team launched in late 2023 and has been working to empower both staff and residents to reduce their waste and ensure it is correctly sorted.

Short videos, flyers, site visits, waste mascots and more help the recycling education team communicate with their target audiences.

Additionally, the recycling education team run and support events such as swap shops to support staff in creative ways to reduce waste streams.

Since the recycling education team started, recycling rates across the city have started to increase with a 0.85% increase in quarter one 2024/25 compared to the same quarter the previous year.

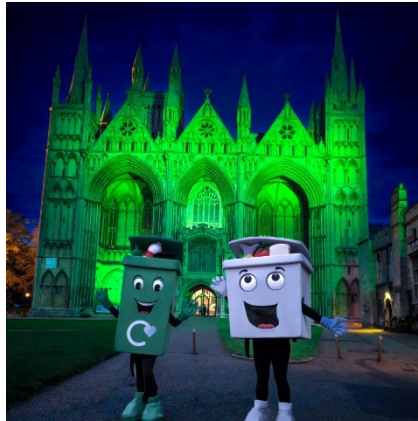


Figure 27: Photo of waste mascots in front of Peterborough Cathedral, which was lit green for recycling week

Addressing residual emissions

Action	Co-benefits
Develop an internal behavioural change campaign to support staff to increase their recycling and re-use rates.	Informing our approach to impacting city-wide emissions
Regularly assess recycling rates in the organisation to review what messaging and measures are impactful.	Informing our approach to impacting city-wide emissions
Expand opportunities for staff to re-use, swap, borrow or recycle items.	Cost-saving for staff
Include a single use plastics policy in the council's procurement process	Support businesses to reduce their plastic use

Purchases

Procurement emissions fall into the council's Carbon Footprint Plus, as it is an emissions area over which the council has influence but not control. Efforts to improve measurement of emissions from purchased goods and services are ongoing, but the dataset remains too incomplete to inform future work and target setting.

A large proportion of the council's Carbon Footprint Plus comes from its purchases, and while this roadmap will not address quantified reductions for procurement, it does address strategies for reducing procurement emissions.

Climate Change Commercial Ask

The council will implement a Climate Change Commercial Ask. The council will ask its suppliers to understand their impact on their emissions and reduce emissions, helping to reduce the council's Carbon Footprint Plus. The Commercial Ask will be introduced in a staged approach, ensuring that all suppliers are supported to meet the council's Ask, and that organisations are not disadvantaged through the tendering process or throughout management of contracts. The proposals for the Climate Change Commercial Ask derive from a Commercial Ask successfully implemented elsewhere.

Proposed Strategic Approach



Figure 28: Strategic approach to procurement

It is proposed that a voluntary Commercial Ask would be introduced before embedding the Ask into procurement processes and contract management. Suppliers would be provided with advice to ensure the Commercial Ask is simple to fulfil, and staff would be trained to provide support.

This process allows for updates to be made to the Commercial Ask in the future when the council may wish to set a more ambitious Commercial Ask reflective of any future changes to the decarbonisation landscape.

Case study: Peterborough Highway Services

Staff in Peterborough Highways Services from both the council and Milestone work closely together to reduce emissions from the contract. A carbon working group ensures that emission reduction targets are met, focusing on topics such as fleet, buildings, construction materials, circular economy and biodiversity.

Milestone reports its emissions annually to the council to feed into the council's Carbon Footprint Plus.

Milestone has now obtained PAS2080 accreditation, a gold standard carbon management accreditation in infrastructure, demonstrating its commitment to work with its clients to limit carbon emissions.

Engagement

Embedding carbon reduction into the council's culture

While the quantified emissions reductions measures identified in this roadmap play a vital role in helping the council reach net zero, the role of every staff member in embedding a culture of carbon reduction across the organisation is also essential.

In recognition of the importance of widespread buy-in, a number of initiatives are working to grow and develop this eco-conscious culture.

The climate change team works closely with the communications team to promote climate initiatives across the council. In addition to sharing information via email and on the intranet, channels include presentations and climate quizzes at all staff meetings and networks such as those for managers and those with a role in embedding change into the organisation. These help to build knowledge and interest in carbon reduction.

The council's employee benefits offerings include schemes such as cycle to work and electric car lease schemes to further support employees in reducing their emissions.

Carbon Literacy

The council delivers Carbon Literacy training to councillors, council officers, and beyond. Attendees are taught about climate change, the global and local impacts, the co-benefits of taking climate actions, how to design projects and how to discuss climate change. As part of this training, people

taking the course are asked to make two pledges – one individual and one collaborative – for specific ways they will reduce emissions in their workplace.

Carbon literacy trainees are supported in developing and delivering on these pledges, which cumulatively reduce the council’s emissions both in tangible and less tangible ways.

There is also shorter form online climate change training available for staff to undertake.

Governance

All formal decisions are subject to a carbon impact assessment to ensure that decision makers have easy access to information on the likely carbon impact of a recommended outcome.

Each service is asked to identify the most significant in their area to reduce carbon emissions. These actions are collated to identify potential carbon reduction activity across the council. These are monitored through the climate change programme, with support offered if required.

Strategic Approach

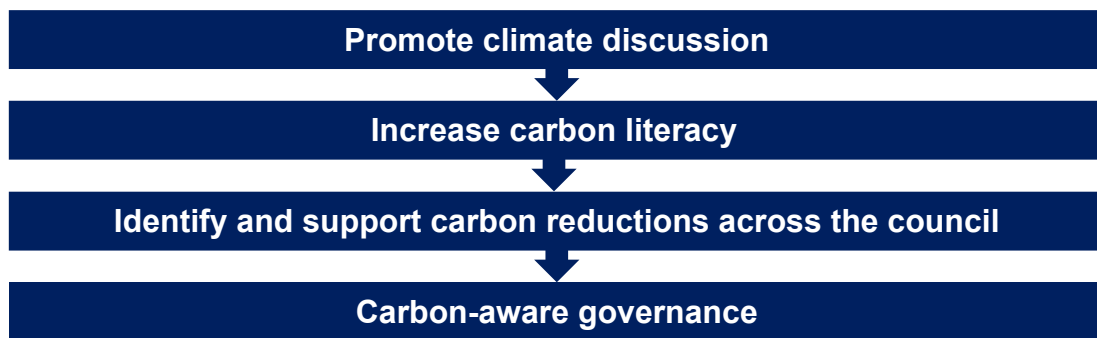


Figure 29: Strategic approach to residual emissions

Renewable energy

The council owns and operates numerous arrays of solar panels, located on its own buildings and elsewhere.

Energy Generation

In 2022/23, council-owned solar panels generated 15,884.4 MWh of electricity. Some of this electricity was used on-site, and some was exported to the grid.

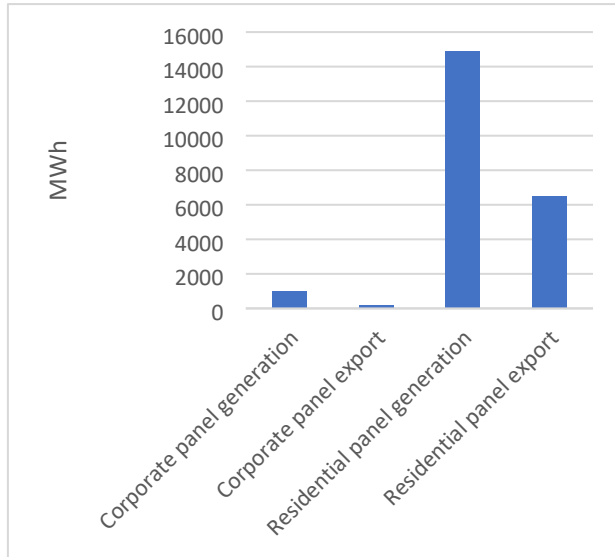


Figure 30: 2022-23 solar generation and export

Historically, the council has only reported on the generation of panels on corporate buildings. However, to illustrate the scale of council renewable investment, the generation of council-owned panels across the country on residential properties is also reported as this data is now available.

Between the council’s corporate estate panels and the residential panels distributed across the country, this generation avoided producing 4,155 tonnes of CO₂e in 2022-23.

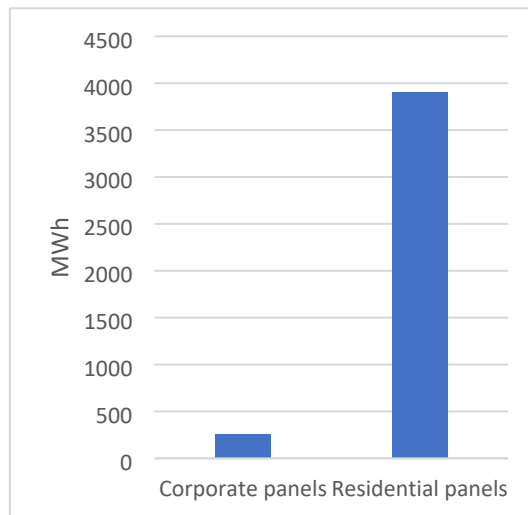


Figure 31: 2022-23 CO₂e avoided through solar generation

The council will continue to explore opportunities for further solar energy generation.

Green Electricity

All electricity drawn from the national grid is generated from a mix of renewable and non-renewable sources, regardless of the type of tariff purchased. When green tariffs are used, certificates of renewable energy generation are matched to units of energy purchased. However, while this may fund the production of further renewable electricity, it does not alter the balance of renewable energy being used by the customer at the point of use.

The council has committed to purchasing green energy by 2030, therefore the council's projected Carbon Footprint has been calculated by including the decarbonisation of using fully decarbonised electricity.

Residual emissions

If implemented in full, the measures outlined in the roadmap have the potential to cut the council's carbon emissions by 70% against a 2022-23 baseline and 78% against a 2018-19 baseline by 2030. However, some residual emissions remain for which there is not yet a defined pathway to reduce.

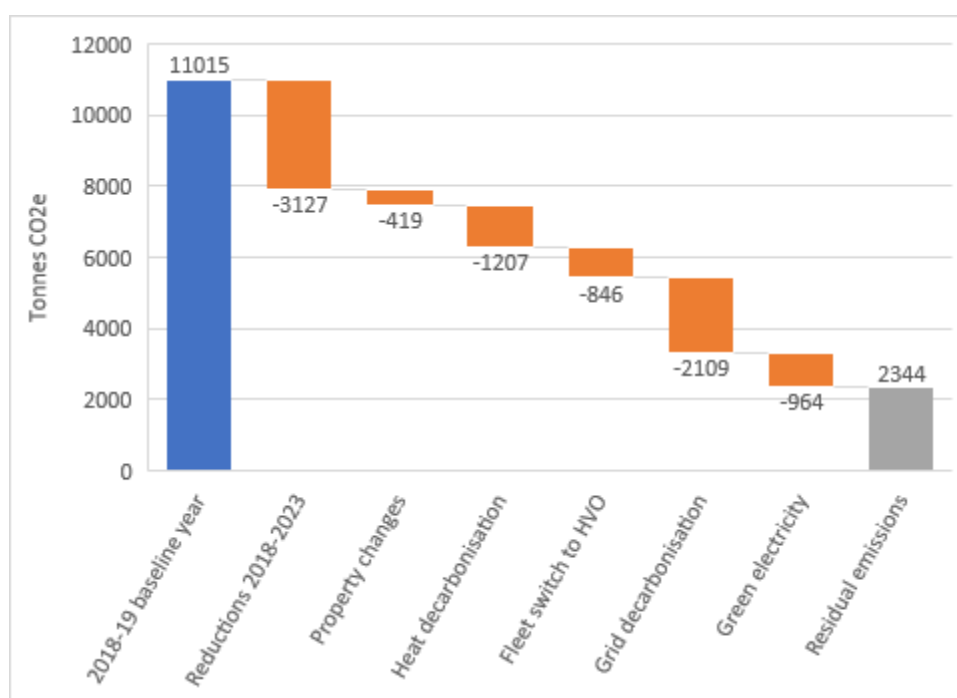


Figure 32: Emissions reductions overview: all measurable actions

Some emissions have the potential to be further reduced, albeit through means which cannot yet be accurately measured. Work to identify and pursue potential additional actions to reduce council emissions will continue as new strategies emerge.

The council aims to further reduce these remaining residual emissions, through a combination of engagement, supported behaviour change, project identification through close working with colleagues and partners, innovative solutions which are not currently viable and potentially through using offsetting.

Figure 33 shows the distribution of estimated residual emissions by quantifiable area.

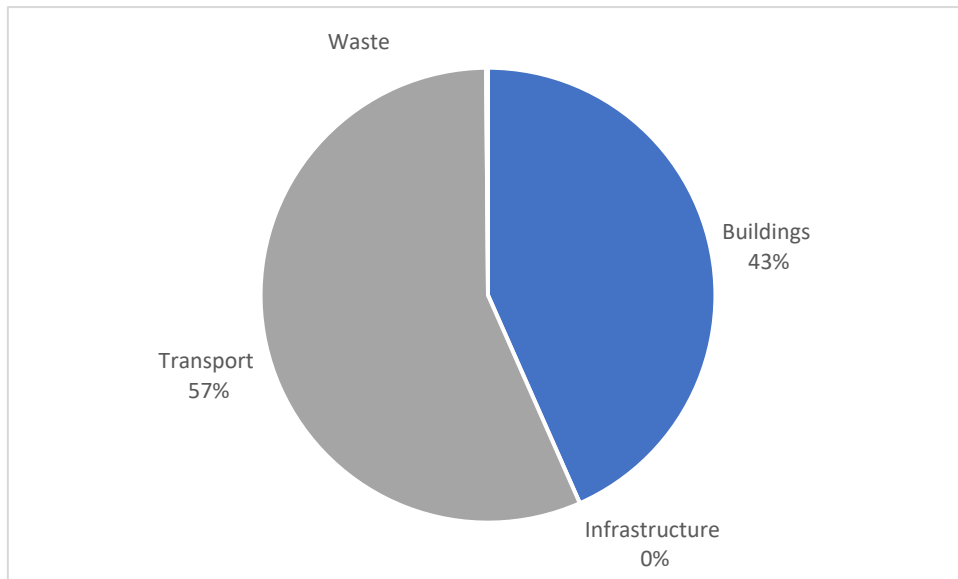


Figure 33: residual emissions by area

Strategic approach

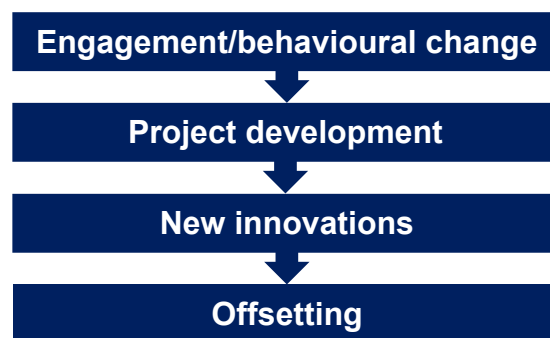


Figure 34: Strategic approach to residual emissions

Offsetting

Validated offsetting schemes exist where organisations can financially contribute to facilitate projects which lower carbon emissions. This allows the organisation to offset its greenhouse gas emissions and achieve a net zero carbon status without eliminating all its carbon emissions.

The council has not participated in any offsetting schemes to date, as available funds would be utilised for viable carbon reductions before offsetting is considered. Residual emissions are expected to decrease as low-carbon technologies advance and further project ideas arise.

However, offsets may be considered after emissions have been reduced as far as possible. The following considerations would be reviewed when evaluating the use of offsetting.

- Use of accredited schemes
- Prioritise carbon 'insetting', which focuses on carbon reductions in the local Peterborough area or within the council's supply chain. This often comes with additional co-benefits for local residents.

Case study: tree planting

In 2018, Peterborough City Council set a target to increase the tree canopy coverage on its own land. The target was set at a 10% overall increase in canopy cover and that planting be undertaken over the 10 years to 2028 which would, over decades, have the effect of meeting that target once the trees matured.

In November 2021, the council radically stepped up its ambitions and established a revised target of a 25% tree canopy coverage, with such coverage achieved by 2035. By 2023, canopy cover was up to 24.2% from 20.4%. Substantial planting will still be needed to achieve the 25% target, but good progress is well underway.

While such tree planting projects do not qualify to offset council emissions, this evidences the council's commitment to carbon capture and reduction.



Figure 35: Peterborough City Council tree planting

Financing decarbonisation

Financing the transition to net zero is in some ways the greatest challenge of all. The financial position for councils across the country including Peterborough City Council remains challenging, with substantial pressures and significant work needed to achieve long-term financial sustainability. Funding must therefore be carefully considered in the pursuit of net zero projects.

Strategic Approach

When pursuing funding sources for net zero projects, the following order of prioritisation will be used.

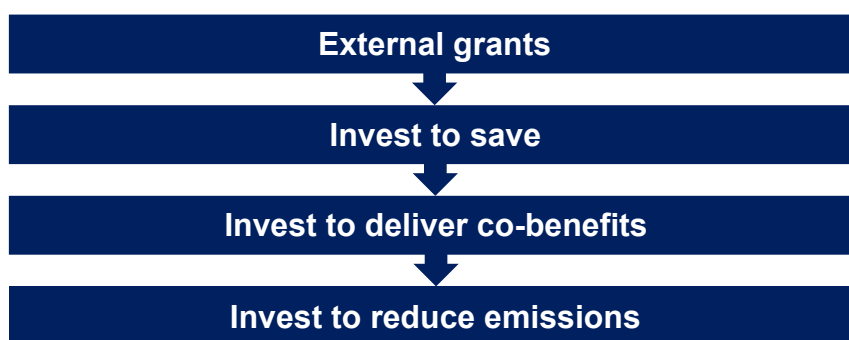


Figure 36: Strategic approach to financing net zero capital projects

Wherever possible, external grants will be sought to cover or contribute to the costs of decarbonisation. Where grants are unavailable or do not fully cover the costs of a decarbonisation project, loans or internal funding will be considered. Loans to deliver projects that offer cost savings and other co-benefits will be considered ahead of projects which offer fewer other benefits.

Financial approvals

This report is not seeking council funding at this time to deliver the recommendations of the roadmap.

It shows the scope of the net zero challenge and helps to direct future grant applications and to prioritise decarbonisation projects based on both impact and financial feasibility.

All projects, regardless of funding routes, will be subject to a full business case separately to this roadmap.

Emissions reporting

Peterborough City Council will continue to report on its emissions annually. The accuracy with which emissions can be reported is constantly improving, both through the Government provided conversion factors used in the calculation process and in the quality of the data collected by the local authority. Work will continue to improve and streamline data collection wherever possible.

Future emissions reporting will support the monitoring of progress against this roadmap to net zero. Tracking the annual change in council emissions offers crucial data in both evaluating the success of the roadmap and implementing any necessary adjustments for its success.

Governance

Figure 37 illustrates the accountability structure for delivering the actions in this roadmap.

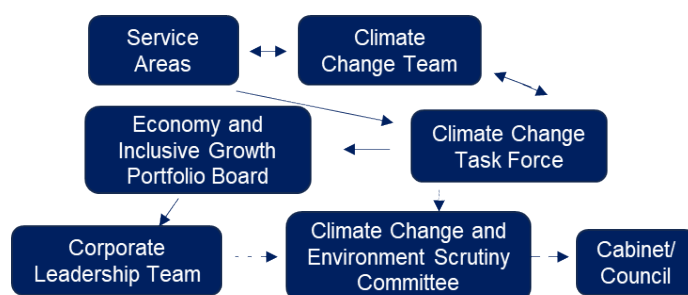


Figure 37: Accountability structure

All projects will be subject to a full business case and the usual governance process, including individual carbon impact assessments.

Actions will be monitored and progress collated to report to higher levels of governance. A report on progress will be taken annually to the Climate Change and Environment Scrutiny Committee, which will offer feedback and advice on the decarbonisation programme.

Glossary

Term	Meaning
Capital projects	

Carbon Footprint	Council emissions under direct council operation
Carbon Footprint Plus	Council emissions including emissions outside the council's direct control
CO ₂	Carbon dioxide, a common greenhouse gas
CO ₂ e	A common unit for describing different greenhouse gases, presented based on warming potential of CO ₂
Commercial ask	Asking an organisation's suppliers to undertake an activity. This may be a voluntary request, or a requirement in procurement processes or contract management.
Conversion factors	Numbers provided by central government to convert energy usage into CO ₂ e estimates
Greenhouse gas (GHG)	Gases which trap heat in the atmosphere, contributing to climate change
Grey fleet	Private employee vehicles which are also used for business purposes
Grid decarbonisation	The national grid is becoming less carbon intense, meaning that electricity produces less CO ₂ e
HVO	Hydrotreated Vegetable Oil, a diesel alternative which cuts approximately 90% of emissions
Net zero	A state in which the quantity of CO ₂ e emitted is equal to the amount captured
Offsetting	Investing in projects which capture greenhouse gases and using this to cancel out residual emissions
Retrofitting	The process of refurbishing a building to make it more energy efficient
Fabric improvements	Improving insulation and ventilation systems in a building
SMEs	Small and medium-sized enterprises

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