Council Carbon Management Action Plan

March 2022

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Executive Summary

Peterborough has the potential to be a truly sustainable city. A city which has a thriving local economy, strong communities and a sustainable way of life. A city where our residents are healthy, happy and prosperous. We are committed to environmental leadership, decision-making and continuous improvement.

To achieve this we will need to do things differently. If everyone on Earth lived as the average Peterborian, British or European citizen does, we would need nearly three planets' worth of resources to sustain us[1]. This means, on average, each of us is using too much of the world's resources to produce the food we eat, treat the waste we produce, generate the energy we use, consume the goods and services we take for granted, and the travel around the area and beyond.

Peterborough City Council has committed to take action to help support Peterborough to become a net zero carbon city, reversing the trend of increasing consumption of natural resources and instead put Peterborough on the road to becoming a truly sustainable city.

Peterborough City Council not only has an important role in placeshaping and in developing a city-wide vision, but also wishes to demonstrate leadership in tackling climate change and has therefore committed to becoming a net zero carbon organisation by 2030. In order to deliver upon this, the council annually measures its carbon footprint and produces an action plan to achieve further reductions in greenhouse gas emissions.

In the financial year 2020/21, Peterborough City Council emitted 14,789 tonnes CO_2e. Improved data collection from materials and sub-contractor services delivered within the Peterborough Highways Services (Milestone) contract is responsible for the rise in emissions from previous financial years. Excluding this additional data collected, the council delivered a 28% reduction in greenhouse gas emissions relative to the 2018/19 baseline. After reductions due to the purchase of green electricity, net emissions equated to 12,076 tonnes CO_2e.

Last year, the council committed to 21 actions to reduce its carbon emissions. Key successes have included swapping the use of diesel in the highways services contract to a biodiesel which reduces emissions by 90%; piloting a carbon literacy training course aimed to educate councillors; and developing a new carbon impact assessment to ensure that the impact of council proposals on city-wide emissions is considered by decision makers.

This action plan commits the council to 25 actions to reduce greenhouse gases in 2022. These include developing a business case for Aragon, the council's waste and parks contractor, to adopt low carbon fuel; embedding climate change into service reviews; and setting low carbon materials as default choices within the council's highways contract.

[1] WWF (2019) EU Overshoot Day. Living beyond nature's limits https://wwfeu.awsassets.panda.org/downloads/wwf_eu_overshoot_day___living_beyond_nature_s_limits_web.pdf

Climate change

The climate science is undeniable, with the impacts of climate breakdown already causing serious damage around the world. Extreme weather events are likely to occur more severely and more frequently across Peterborough.

Global climate change commitments

Since the industrial revolution it is estimated that humans have caused global temperatures to increase by 1.07°C, as of 2019[2]. The Paris Agreement, which has been signed by almost all countries across the world, commits each signatory to aim to keep global temperatures to a 2°C rise, aiming for below 1.5°C. The Intergovernmental Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5°C, describes the enormous harm that a 2°C average rise in global temperatures is likely to cause compared with a 1.5°C rise. The United Nations Climate Change Conference of Parties (COP) is held annually to ensure action continues towards the Paris Agreement goals. COP26 was held in Glasgow in November 2021 and whilst several agreements were made at COP26, it has been acknowledged that if a less than 1.5°C temperature increase is to be achieved, then more action is needed[3].

Climate impacts

Climate impacts are being seen across the world. Global temperatures have increased faster over the past 50 years than at any other time within the past 2000 years. In the 2010s, Arctic sea ice was at its lowest level since at least 1850 and global sea levels have risen faster since 1900 than any other century in the last 3000 years. Each of these scientific observations has high certainty.[2]

The impact of climate change is also being seen locally today. The highest temperature ever recorded in the UK occurred in 2019, with a temperature of 38.7°C seen in Cambridge Botanic Garden.[4] Intense periods of rainfall have occurred across Peterborough, most recently in July 2021 where several properties were flooded internally for the first time in roughly 20 years, impacting people's lives and livelihoods. These weather events are predicted to become more severe and more frequent as global temperatures rise further. The latest UK climate projections suggest that the UK climate will continue to warm over the rest of this century and on average will result in hotter and drier summers, warmer and wetter winters with more extreme weather events expected.[4]

The Cambridgeshire and Peterborough Independent Commission on Climate was established by the Cambridgeshire and Peterborough Combined Authority in 2020. The Commission identified a number of severe climate risks to people, infrastructure and the natural and built environment across the local area. For example, across the county, one in 10 homes are predicted to face river

[2] Intergovernmental Panel on Climate Change (IPCC) (2021) Climate Change 2021, The Physical Science Basis, Working Group I contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change

[3] UN Climate Change Conference UK 2021 (2021) COP26 The Glasgow Climate Pact COP26-Presidency-Outcomes-The-Climate-Pact.pdf (ukcop26.org)

[4] Met Office (2021) UK Climate Projections: Headline Findings July 2021

flooding, with higher risk in East Peterborough. Surface water flooding is a risk in paved areas due to intense rainfall over short periods of time. Storm surges may cause the Nene to tidal flood. Temperatures above 36°C are likely to occur every 20 years by 2050; overheating may lead to health risks. Drier summers will stretch water resources and impact farming, industry and the natural environment. Warmer and drier summers will also lead to rapid degradation of peatlands. Peatland degradation will increase carbon emissions and make land less suitable for farming.[5] These observations and scientific predictions evidence the need to act urgently to minimise the impact of climate change.

Greenhouse gases

Human activity has caused accelerated release of greenhouses gases, which has caused heat to become trapped, resulting in global temperature rises. Solar energy travels from the sun to Earth, some of this energy is reflected back into space, whilst some becomes trapped by greenhouse gases. The greenhouse effect is essential in warming earth to a temperature which can sustain life, however since the industrial revolution, humans have been responsible for releasing unsustainable amounts of greenhouse gases. This has caused more and more energy to become trapped and has led to rising global temperatures.

There are four main gases which have contributed to global temperatures rises, these are carbon dioxide, methane, nitrous oxide and fluorinated gases. Carbon dioxide is responsible for 81% of global warming, methane 11%, nitrous oxide 4% and fluorinated gases 3%. To ensure that global temperatures do not exceed a 2°C rise, it is essential that greenhouse gas emissions are limited and a net zero state is reached as soon as possible. A net zero state is defined as when an equal amount of greenhouse gas emissions are captured, as those emitted.

Peterborough City Council Commitment

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

In making this declaration the Council committed to a wide range of comprehensive actions, including, in summary:

- Ensure political and chief officer leadership to embed this priority into work, ensuring all decisions are in line with net zero carbon by 2030.
- Undertake public engagement by establishing a Climate Change Partnership group, proactively involving young people and convening a people's assembly.
- Review budget proposals and the ascertain environmental impact.

[5] Cambridgeshire & Peterborough Independent Commission on Climate (2021) Fairness, nature and communities: addressing climate change in Cambridgeshire and Peterborough October 2021

- Use planning powers to deliver net zero carbon new developments and communities.
- Increase tree planting.
- Achieve 100% green energy across the council's full range of functions by 2030 and explore renewable generation and storage.
- Replace all council vehicles with electric or hybrid vehicles including the mayor's car, provide electric vehicle infrastructure and encourage alternatives to private car use across the city.
- Increase the efficiency of buildings and help to address fuel poverty.
- Coordinate events to raise awareness, share best practice and provide information on council activities.
- Call on the UK Government to provide the powers, resources and help with funding to make this possible and ask local MPs to do likewise.

In 2021, Peterborough City Council signed up to the Peterborough Climate Commitment. The council joined organisations across the city who have committed to improve their environmental impact. Organisations, such as businesses, schools and charities, agreed to measure, monitor and act to reduce carbon emissions, improve the natural environment and reduce consumption of resources. Peterborough based organisations are invited to sign up to the Peterborough Climate Commitment.

Peterborough City Council's Carbon Footprint

Methodology

To determine the effectiveness of the council's actions and to prioritise plans for future decarbonisation, organisational emissions need to be calculated. A few key features of the approach to carbon footprinting are highlighted below.

1. Emissions are reported in CO_2e

There are four main gases which contribute to global temperature rises, these are carbon dioxide, methane, nitrous oxide and fluorinated gases. Each greenhouse gas has a different capacity for trapping heat. The amount produced of each gas is multiplied by its Global Warming Potential to calculate a carbon dioxide equivalent (CO_2e) value, this allows for easy comparison between emission causing activities. All data within this document is reported using CO_2e values.

2. Greenhouse gas emissions are reported in three scopes

Scope 1 emissions are those which are released on site. These include emissions from the fuel used in gas boilers and combustion engine vehicles.

Scope 2 emissions are those which are released by purchased energy where the emissions are released offsite. These include emissions from electricity from the national grid.

Scope 3 emissions are those which are released by indirect activities. These can include emissions produced by the goods and services we purchase, by staff travel, by the processing of waste produced, by the energy dissipated through the transmission and distribution of the energy supply system or by a number of other activities.

3. Scope 3 emissions are incomplete

Scope 3 emissions are difficult to measure as they are not controlled by the organisation. There is a data collection challenge, made more difficult by the large number of suppliers the council works with and the immaturity in emission reporting seen across many organisations nationally. For goods and services that are purchased from a non-exclusive supplier, there is the additional difficulty in assigning emissions to each customer and for materials purchased from sub-contractors there are additional layers of emission reporting required. There is an acknowledgement that not all of the council's scope 3 emissions are included in the carbon footprint presented.

Calculating scope 3 emissions remains a challenge for all organisations, including local authorities. Work is being undertaken in some councils to estimate these emissions, early outputs indicate that this activity accounts for the vast majority of council emissions. Local authorities differ significantly

in the activities they have responsibility for and the activities they deliver in house or outsource. As few local authorities have undertaken this work, a comparator organisation has not yet been identified. However, it is likely that Peterborough City Council's emissions from purchases would also account for a significant proportion of total emissions.

Work will continue to increase the scope 3 emissions measured and therefore scope 3 emissions are likely to rise in future years due to improved data collection. This rise in reported emissions would not be reflective of a worse environmental impact. The council's net zero carbon ambitions relate to all scopes, and so work will be undertaken to reduce scope 3 emissions as well in addition to better monitoring.

4. Gross emissions and net emissions are reported

In April 2020, the council started to purchase electricity using a green electricity tariff offered by Total Power and Gas.

Electricity used on site is drawn from the national grid, which is produced by a variety of renewable and non-renewable sources. Each year a national electricity grid carbon factor is calculated which reflects the carbon intensity of the electricity used that year. As the contribution of renewable sources has already been factored into calculations, to avoid double counting any zero carbon electricity, the national electricity carbon factor should be used to determine the organisation's carbon footprint, this is termed location-based emissions reporting.

The green tariff electricity purchased by the council from Total Power and Gas is certified by Ofgem under the Renewable Energy Guarantee of Origin scheme. The electricity purchased under this tariff can be matched to zero carbon renewable sources and this reduction in emissions can be reflected in market-based reporting. For full transparency of data, both location-based and market-based emissions are reported.

The gross emissions (calculated using the location-based system for electricity reporting) can be offset by reductions owing to purchase of a green electricity tariff. This results in a net emissions value, which has been reported.

Our carbon footprint is calculated in line with the UK Government's Environmental Reporting Guidelines for Voluntary Greenhouse Gas Reporting[6]. A fuller explanation of the methodology used to calculate the council's carbon footprint can be found in appendix A.

[6] HM Government (2019) Environmental Reporting Guidelines: Including streamlined energy and carbon reporting guidance March 2019 (Updated Introduction and Chapters 1 and 2)

Council carbon footprint 2020-21

The council's carbon footprint has been calculated for the year 1st April 2020 to 31st March 2021. The total emissions equals 14,789 tonnes CO_2e.

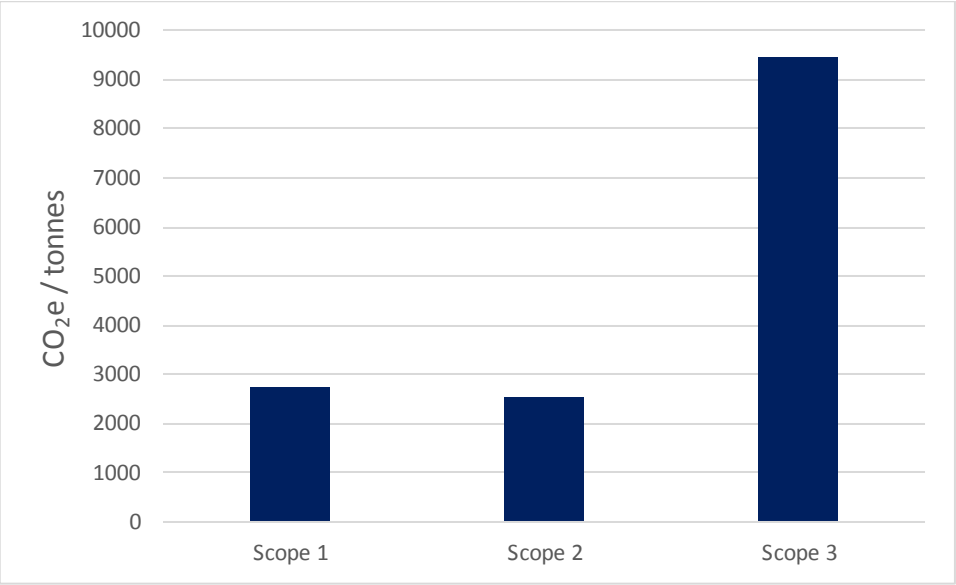

Figure 1: Council carbon footprint 2020/21 (gross emissions)

Comparison to previous years

Peterborough City Council has reported its carbon emissions in this manner since 2018/19, data is shown for comparison.

	Emissions (tonnes CO_2e)		
	2018/19	**2019/20**	**2020/21**
Scope 1	2,721	2,255	2,763
Scope 2	4,924	3,503	2,551
Scope 3	3,962	3,855	9,476
Total	**11,607**	**9,613**	**14,789**

Table 1: Council carbon footprint comparison of years 2018/19, 2019/20 and 2020/21 (gross emissions)

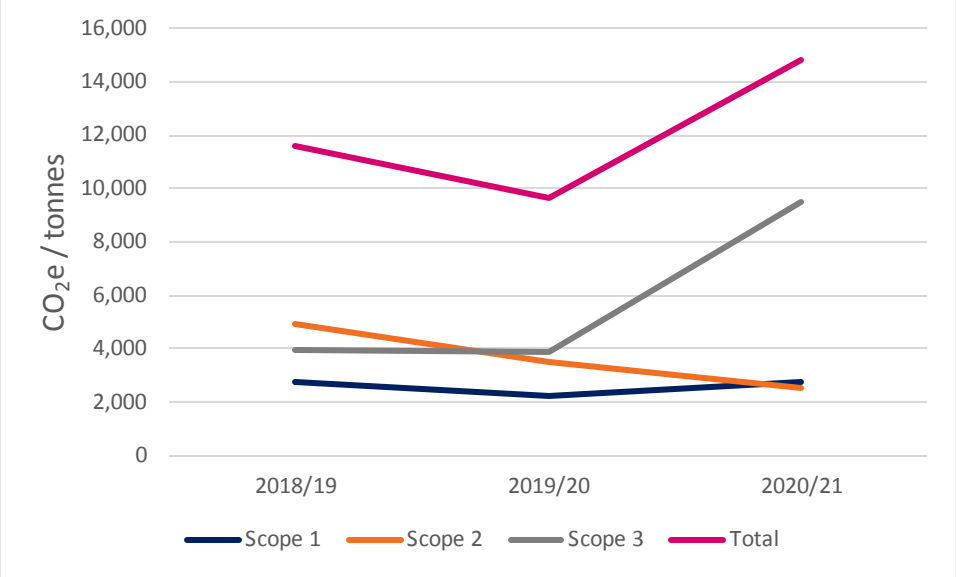

Figure 2: Council carbon footprint comparison of years 2018/19, 2019/20 and 2020/21 (gross emissions)

There are several factors that have contributed to the increase in carbon footprint from 2019/20.

The most significant impact to the carbon footprint is the inclusion of emissions from materials and sub-contractors within the Peterborough Highways Services contract which is operated by Milestone, as reflected in the increased scope 3 emissions. In 2020/21 this equated to 6,093 tonnes CO_2e, the figure had not been calculated in previous years. If this data were not included in the 2020/21 carbon footprint, the resultant data would show a reduction of 917 tonnes CO_2e since 2019/20, representing a 9.5% decrease. This is mostly owing to a 27% reduction in scope 2 emissions, i.e. council purchased electricity, which is partially explained by the 9% decarbonisation of national grid from the year 2019 to 2020. If the Peterborough Highways Services materials and sub-contractor data was not included in the 2020/21 carbon footprint, the resultant data would show a reduction of 2,911 tonnes CO_2e since the baseline year 2018/19, representing a 25% decrease.

It should be noted that the financial year 2020/21, saw disruption to previous ways of working, closures of some buildings and possible increased heating demands from buildings that required increased ventilation due to the Covid-19 pandemic. For this reason, changes seen within this year may not be indicative of future emissions.

The council's carbon footprint can be allocated to different categories to allow fuller understanding of what activities are contributing to emissions.

	2020/21 Greenhouse gas emissions (tonnes CO_2e)	2020/21 Percentage of total
Buildings & utilities	**6367**	**43.1%**
Council buildings* – electricity	1808	12.2%
Council buildings* – gas	2974	20.1%
Street lighting – electricity	1360	9.2%
Car parks – electricity	13	0.1%
Milestone buildings – electricity	34	0.2%
Milestone buildings – gas	23	0.2%
Aragon buildings** – electricity	67	0.5%
Aragon buildings** – gas	88	0.6%
Transport	**2307**	**15.6%**
Council transport	68	0.5%
Council staff business travel	148	1.0%
Milestone transport	302	2.0%
Aragon transport	1789	12.1%
Purchased goods and services	**6093**	**41.2%**
Milestone purchased goods and services	6093	41.2%
Hotel stays	0.3	0.0%
Waste	**22**	**0.1%**
Council waste	7	0.0%
Milestone waste	15	0.1%
Total	**14789**	**100**

Table 2: Breakdown of council emissions 2020/21 (gross emissions)

*Some of the buildings which Peterborough City Council pays the energy bills for are rented to commercial organisations, therefore although the council owns the asset, it is not under full control of its operation.

**Aragon utilities are purchased by the council, however are reported here separately to show organisational boundaries.

	2020/21 Greenhouse gas emissions (tonnes CO_2e)	2020/21 Percentage of total	Percentage change from baseline 2018/19
Buildings & utilities	6367	43.1%	- 31%
Transport	2307	15.6%	- 2.4%
Purchased goods and services	6093	41.2%	/
Waste	22	0.1%	+ 59%
Total	**14789**	**100**	**+ 27%**

Table 3: Council carbon footprint 2020/21. Data categorisation showing percentage contribution to the total carbon footprint and percentage change since the 2018/19 baseline year (gross emissions)

Green electricity tariff

The above data reports on gross greenhouse gas emissions. There are a number of items which can be deducted from an organisation's gross emissions to obtain its net emissions. Examples of deductions include emissions offset by purchasing zero carbon energy, by verified carbon capture schemes, by owned renewable energy generation or by verified offsetting schemes.

In April 2020, the council started to purchase electricity using a green electricity tariff offered by Total Power and Gas for the majority of its electricity meters. The green tariff electricity is certified by Ofgem under the Renewable Energy Guarantee of Origin scheme. The electricity purchased under this tariff can be matched to zero carbon renewable sources, and this reduction in emissions is reflected in market-based reporting.

The following graph shows how the reduction in electricity emissions contributes to the overall carbon footprint. It is reflected in reduced scope 2 and scope 3 emissions. After considering the market-based emissions from electricity, the net carbon footprint of the council is reduced from 14,789 tonnes CO_2e to 12,076 tonnes CO_2e.

	Emissions (tonnes CO_2e)		
	2018/19	**2019/20**	**2020/21**
Scope 1	2,721	2,255	2,763
Scope 2	4,924	3,503	2,551
Scope 3	3,962	3,855	9,476
Total gross emissions	**11,607**	**9,613**	**14,789**
Green tariff	**N/A**	**N/A**	**2,713**
Total net emissions	**11,607**	**9,613**	**12,076**

Table 4: Council carbon footprint comparison of years 2018/19, 2019/20 and 2020/21 (gross and net emissions)

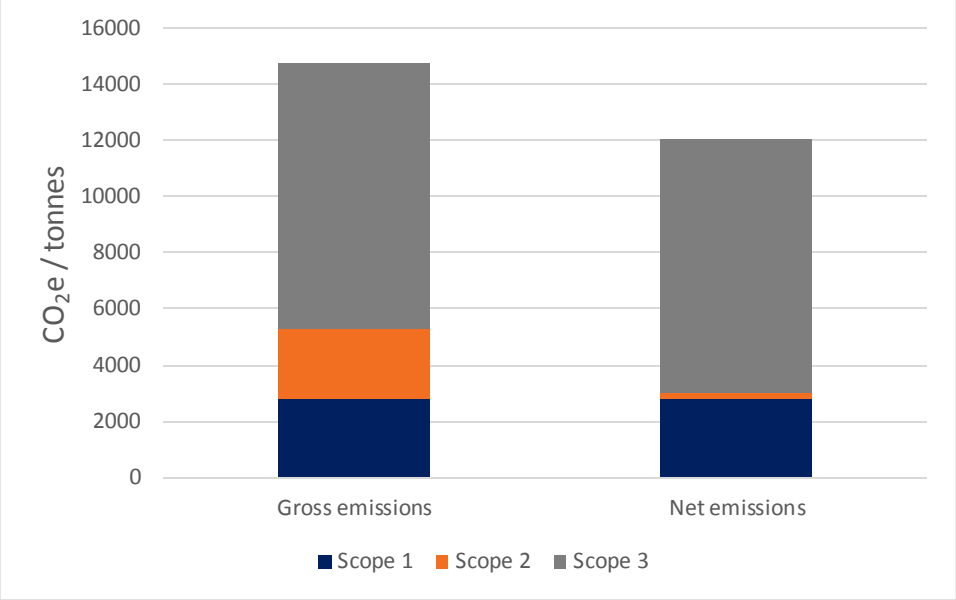

Figure 3: Council carbon footprint comparison of years 2018/19, 2019/20 and 2020/21 (gross and net emissions)

A number of electricity meters transferred across to the green electricity tariff midway through the 2020/21 financial year, therefore net emissions from council-purchased electricity are likely to be reduced within the 2021/22 financial year carbon footprint.

Renewable energy

895 MWh of renewable energy was generated in 2020/21 from Peterborough City Council owned solar panels. This generation offset 229 tonnes CO_2e that would have elsewise been produced. There is insufficient data to determine total the amount of electricity used on site and that exported to the national grid, and therefore offsets have not been included in net emission calculations.

Intensity ratio

Local government responsibilities are often flexible with activities differing over time. These changing activities may affect the amount of greenhouse gas emissions and therefore it can be useful to express carbon emissions as intensity ratios.

Intensity ratios express the greenhouse gas impact per unit of spend or per member of staff. The council employed 1127 full time equivalent (FTE) staff in 2020/21 which equates to an intensity measure of 13.12 tCO_2e/FTE. There are limitations in this data as there are buildings which are rented to external organisations, for which the staffing count is not considered.

The council spent £494,874,000 in 2020/21[7] (subject to audit), which equates to an intensity measure of 29.88 tCO_2e per £1m spent.

	2018/19 Gross emissions	2019/20 Gross emissions	2020/21 Gross emissions	2020/21 Net emissions
Intensity ratio – greenhouse gas emissions per staff (tonnes CO_2e/FTE)	12.17	10.08	13.12	10.43
Intensity ratio – greenhouse gas emissions per spend (tonnes CO_2e/£1m spent)	19.18	19.01	29.88	23.76

Table 5: Intensity ratio comparison of years 2018/19 (gross), 2019/20 (gross), 2020/21 (gross) and 2020/21 (net)

It should be noted that the council delivers some of its services via 3rd party arrangements and the staff number for these services is not included. The council also delivers a number of services via partnership arrangements with Cambridgeshire County Council; this is reflected in the overall FTE count.

Future decarbonisation of the national electricity grid

The national electricity grid is expected to show a decarbonising trend over time. From a 2020 baseline, the carbon emissions factor is expected to reduce by 68% by 2030 and by 96% by 2050[8]. This will mean that future electricity use will become less carbon intensive. If the council's electricity use remained at 2020/21 levels, this would represent a 2,232 tonne decrease in the council's gross carbon emissions by 2030. Additionally, emissions savings would be made as the carbon footprints of suppliers from which the council purchases goods and services would also be reduced. However as these are not currently included in the council's emissions, the reduction cannot be calculated.

[7] Peterborough City Council (2021) Statement of Accounts 2020/21 https://www.peterborough.gov.uk/asset-library/pcc-statement-of-accounts-2020-21.pdf

[8] Department for Business, Energy and Industrial Strategy (2021) Green Book supplementary guidance: valuation of energy use and greenhouse gas emissions for appraisal – Data tables - Electricity emissions factors to 2100, kgCO2e/kWh

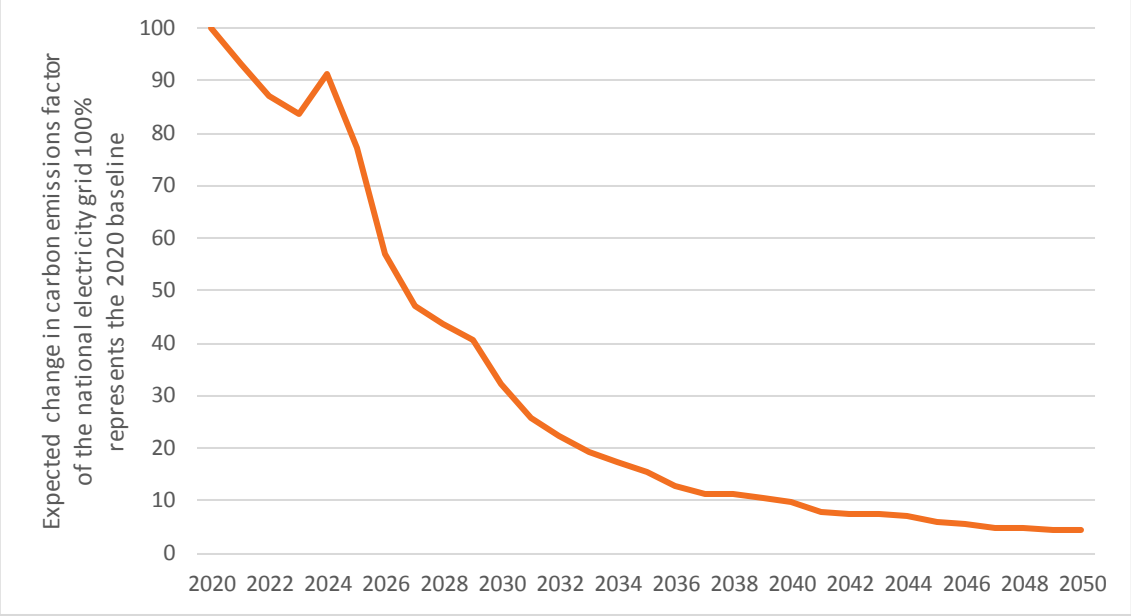

Figure 4: Governmental projections for the carbon emissions factor for the national grid, assuming public sector use, calculated using a consumption based grid-average.

Project development

Analysis of the carbon footprint data enables identification of high emitting areas to prioritise decarbonisation projects. The most significant area of emissions is purchased goods and services through the highways contract (6,903 tonnes CO_2e), followed by council purchased gas (3,062 tonnes CO_2e) and Aragon-owned transport (1,789 tonnes CO_2e).

Decarbonisation projects

In order to become a net zero carbon organisation, the council has commenced a programme of climate change projects. Each year the council makes a number of commitments to reduce organisational greenhouse gas emissions.

2021 Commitments to address carbon emissions

The council made 21 commitments in the 2021 Council Carbon Management Action Plan. Progress on these commitments is discussed below.

Progress on 2021 commitments			
	Commitment	**Area of emissions**	**Update**
1	Develop and trial a proposal for minimum street lighting levels across the city to maximise carbon savings, balancing environmental, social and economic factors.	Buildings/ utilities	Following an initial trial the council introduced a new dimming regime in April 2020. Due to significant reduced traffic levels throughout the pandemic, the council took the opportunity to reduce lighting further and dim all lights across the city by 40%. As traffic levels have increased again following the pandemic it was necessary to revert to the agreed dimming regime with the addition of increased dimming (by 40%) between 00:00 and 05:00 in residential areas. This has been in operation since September 2021.
2	Roll out 'Carbon Literacy' training during 2021, initially focusing on Members of the Climate Change Cross Party Working Group, Change Champions and lead officers from each department across the council.	Overarching	Carbon Literacy Trust training has been delivered to staff and councillors. Peterborough City Council delivered a pilot version of the elected member's training course, helping to optimise the course material and activities.
3	Seek to secure funding from future rounds of the Public Sector Decarbonisation scheme (or an alternative source) to improve the efficiency of the council's estate.	Buildings	Funding was secured from the Public Sector Decarbonisation Scheme to develop a heat decarbonisation plan for Peterborough's maintained schools. This is due for completion in March 2022 and

			will provide information necessary to bid for further rounds of funding to complete heat decarbonisation works.
4	Develop a process for collecting additional emissions data from the council's farm estate and seek funding to undertake research to identify potential opportunities to reduce carbon emissions from peat soils.	Land Use	Due to limitations in staff resource, delivery of this action has not been progressed. The Cambridgeshire and Peterborough Combined Authority has identified mapping of peatlands and supporting the farming industry to adopt sustainable practices as key areas of action.
5	Develop a process for collecting additional emissions data from 3rd party organisations including Medesham Homes and Opportunity Peterborough.	Consumption	Milestone, the highways contractor, has supplied data on their procured emissions including those from purchased materials and sub-contractor operations. This data has been included in the carbon footprint for 2020/21.
6	Develop a process for collecting additional emissions data from purchased materials and work with the council's procurement team to identify mechanisms to improve the sustainability of the council's procurement process.	Consumption	Carbon emissions have been included in a couple of large procurement exercises. Standard climate change questions for tenders are being developed.
7	When normal Mayoral duties resume, a new lease for the Mayoral car will be considered which will include options for an electric or hybrid vehicle.	Transport	An electric car has been leased for Mayoral duties, this ensures the Mayor leads by example when attending local events.
8	To ascertain and review options to enable the council to consider switching to a low carbon gas tariff.	Buildings	The council is currently in a gas supply contract until 2023; this energy supplier does not offer green gas. The supplier does have an offset tariff, where an additional cost is added to bills to fund projects which achieve carbon reductions equivalent to the emissions released by gas usage. Discussions by the climate change working group deemed that any available funds should be directed towards viable internal decarbonisation projects before offsetting was utilised.
9	Begin to implement recommendations from the fleet review undertaken by	Transport	The council has procured a new refuse fleet of 23 vehicles. The bin lifts are operated via

	Aragon which will see the introduction of new electric vehicles.		electricity rather than diesel, which reduces carbon emissions. The council has also procured a further two fully electric refuse collection vehicles to be used on the garden waste service.
10	Develop detailed carbon assessments for two major highway projects and use the information to influence the final design.	Consumption	The Peterborough Highways Services teams from the council and Milestone have run carbon reduction workshops on a major project to design out carbon emissions through alternative materials and low carbon construction practices. This model will be used on future projects.
11	Engage with national government on the resources and legislation necessary to empower local government to deliver our climate ambitions.	Overarching	The council has engaged with national government on a number of occasions. Examples include participation in government consultations on the OxCam Arc, Extended Producer Responsibility, Deposit Return Schemes and consistency of waste collections.
12	Develop a Business Case to establish the viability of switching the local Milestone fleet to an alternative sustainable fuel.	Transport	A business case was developed for the Milestone fleet to operate using hydrotreated vegetable oil (HVO) instead of diesel. In February 2022 this was put into operation. HVO gives a 90% reduction in CO_2e emissions in comparison to diesel. It is intended that HVO is used as an interim fuel for these large vehicles before alternative fuels are available.
13	Investigate the opportunities to reduce emissions from the Regional Swimming Pool, currently the council's single highest carbon emitting site.	Buildings	The new pool development has been put on hold whilst finance options are explored. Work to ensure carbon emissions are minimised will continue when this is resolved.
14	Continue to rationalise office floorspace thereby reducing energy demands, for example, excess floorspace at the Town Hall will be leased.	Buildings	Discussions were put on hold as it was unclear as to what office space would be required following the Covid-19 pandemic and a potential return to the office. Discussions are re-commencing.

15	Initiate a process to identify adaptation opportunities across the council's operations and potential interventions.	Adaptation	A costed proposal is being developed for a climate change adaptation plan. This will be considered by the Cabinet Member for Waste, Street Scene and the Environment once developed.
16	Roll out further guidance and training for staff in relation to the recently introduced 'Carbon Impact Assessment' procedure – a new assessment which requires all council decisions to be assessed for the carbon implications of the decision being made.	Overarching	A new carbon impact assessment process is in place. Decision makers are now presented with information on how proposals may affect carbon emissions from the council and across the city. There is also a requirement to consider additional aspects that could be undertaken to lower any negative impacts. The updated carbon impact assessment was developed through discussions with staff to ensure that it was simple to complete and easily accessible.
17	Actively participate in a citywide Climate Change Partnership forum, and the annual Climate Change Action day.	Overarching	Peterborough City Council helped to establish a Peterborough Climate Change Partnership. The Partnership is still developing and the full scope of the group may evolve. Early work of the Partnership has included developing the Peterborough Climate Commitment, which local organisations can sign up to assess, monitor and act to reduce environmental impacts.
18	Further develop the cross-party Climate Change Member Working Group, so that each political party of the council can both champion carbon savings, scrutinise decision making and steer further carbon savings initiatives and ideas.	Overarching	The cross-party climate change working group meets monthly to discuss policy direction. The group has held a public information gathering session, where tree planting professionals were invited to give their expertise to help direct Peterborough City Council plans.
19	Work with other local authorities to ensure best practice is shared and opportunities to collaborate are identified and developed.	Overarching	Officers attend regular meetings with climate change officers across Cambridgeshire from local and combined authorities.
20	Hold the second annual Climate Action Day, known as March Forth to engage businesses and residents across the	Overarching	A Climate Action Day was held on 4th March 2021. An online social media campaign was

	city. This day will be a celebration of the work to date, as well an opportunity to share ideas on how to tackle climate change and take a pledge to adopt climate friendly behaviours for the day.		coordinated to encourage residents and businesses to adopt climate friendly actions. Further to this, during COP26, a social media campaign was delivered to promote climate heroes, people in the local community who are taking steps to reduce their environmental impact.
21	Conduct a staff travel survey once Covid-19 restrictions are lifted to understand the change in travel behaviour. Opportunities to support home working where feasible will be explored.	Transport	Covid-19 restrictions have not yet been lifted and so this work has been paused. Home working has been utilised well throughout this year, and although options to return to the workplace may be re-introduced in the future, it is likely that home-working will also remain an option.

Table 6: Progress update of 2021 climate change commitments

2022 Commitments to address carbon emissions

To reduce the council's organisational emissions a programme of projects for 2022 has been designed. The recommendations of the Cambridgeshire and Peterborough Independent Commission on Climate were considered during discussions on programme development, as well as local insight from officers and members of the cross-party climate change working group.

In order to make decisions on what projects to take forward, the council has assessed projects based on the following criteria:

- **Project cost.** The current financial position of the council has led to the development of a programme of actions which can be completed within existing resources, requiring no additional finance.

- **Potential impact to emissions.** Projects with the highest potential impact to emissions have been prioritised.

- **Ease of implementation.** Staffing resources must be utilised efficiently to ensure that maximal projects can be delivered.

- **Public demonstration.** The council has an important leadership role in demonstrating how projects which tackle climate change can be completed to other organisations and businesses.

This process has resulted in the following list of 25 commitments to tackle climate change in 2022.

The potential impact to emissions has been assessed assuming the project was in operation. For instance, the potential impact on emissions for the development of a business case for the use of low carbon fuel in the Aragon fleet, has been assessed assuming that low carbon fuel was in use.

2022 Commitments			
	Commitments	**Area of emissions**	**Potential impact to emissions**
1	Develop a communications plan to support staff to lower carbon emissions.	Overarching	No direct impact
2	Deliver carbon literacy training to councillors and officers. Aiming to achieve 70% over the next few years.	Overarching	No direct impact
3	Monitor and support councillors and officers to deliver upon carbon reduction pledges made during carbon literacy training.	Overarching	No direct impact
4	Work with officers to conduct a review of each service to determine how the council can reduce carbon emissions.	Overarching	No direct impact
5	Develop a process by which in the council's budget setting process, wherever possible,	Overarching	No direct impact

	spending plans are reprioritised to enable Peterborough City Council to better achieve its corporate objective of achieving net zero carbon by 2030.		
6	Develop a process to consider the financial and environmental value of carbon capture and carbon emission reductions. Financial and environmental costs will result from the impacts of climate change if global carbon reduction is not achieved.	Overarching	No direct impact
7	Collaborate with other local authorities to ensure best practice is shared and opportunities to collaborate are identified and developed.	Overarching	No direct impact
8	Engage with national government on the resources and legislation necessary to empower and fund local government to deliver the council's climate ambitions.	Overarching	No direct impact
9	Seek to utilise section 106 and other external funding to expand the capacity of the climate change core team.	Overarching	No direct impact
10	Develop a business case for Aragon to use low carbon fuel (e.g. HVO) across its fleet.	Transport	High potential impact
11	Work with Milestone to increase the uptake of low carbon fuel across the supply chain.	Transport	High potential impact
12	Develop an air travel policy which seeks to eliminate air travel for journeys within Great Britain and require Director signoff for overseas air travel.	Transport	Low potential impact
13	Conduct a council-wide travel survey to determine post-pandemic travel habits to inform plans which could reduce emissions from business mileage.	Transport	No direct impact
14	Support and promote car sharing, active travel and use of public transport to staff and councillors.	Transport	Medium potential impact
15	Develop a policy to incorporate the transport hierarchy across the council's capital projects. This would ensure that facilities were in place and information available to support staff and visitors to walk, cycle or take public transport over travelling by car.	Transport	Medium potential impact
16	Develop a policy to incorporate the waste hierarchy across the council's capital projects and service delivery. This would ensure that facilities were in place and information available to support staff and visitors to deal with waste in the following order of prioritisation: prevent, reduce, reuse, recycle, recover and dispose.	Waste	Medium potential impact

17	Conduct a sampling exercise of council waste to inform the setting of a council waste target. Deliver targeted communications to improve waste reduction and separation.	Waste	Low potential impact
18	Ensure the council's use of single use plastic is reduced.	Waste	Low potential impact
19	Research and explore options with the ambition of developing a procurement plan which will look to include progressive milestones to 2030 to support the council's supply chain to reduce emissions.	Purchases	High potential impact
20	Set low carbon construction methods and materials as default options within the Milestone highways contract.	Purchases	High potential impact
21	Continue to improve asset management of council owned mobile phones and IT equipment to further reduce unnecessary purchases and wastage.	Purchases	Low potential impact
22	Seek grant funding or sponsorship to support delivery of 125 hectares of tree planting per annum to deliver the council's 25% tree canopy cover target by 2035.	Land Use	High potential impact
23	Investigate the potential of setting up a carbon credit scheme to complement the council's tree planting ambition.	Land Use	Medium potential impact
24	Work with Aragon to optimise climate friendly practices, both to mitigate and adapt to climate change.	Land Use	Medium potential impact
25	Promote licences to cultivate. These allow local residents and community groups to tend to planted areas of council-owned land.	Land Use	Low potential impact

Table 7: 2022 climate change commitments

It should be noted that actions within the climate change programme will not be limited to the above list, additional projects will be developed and pursued as opportunities are presented. External grant funding opportunities will likely influence the development of additional projects.

Finance

The action plan features commitments which will aid the council to reaching its goal of becoming a net zero carbon organisation by 2030. It is acknowledged that the council is not currently in a financial position to commit to additional expenditure. Commitments listed in this action plan do not require internal funding. Where additional funding is required to progress actions further, approvals will be sought via existing governance structures and the development of business cases to ensure value for money is achieved. It is acknowledged that additional finance is required to address the urgency of climate change and will likely be sought when the council is in a sustainable financial position.

The council will explore various finance options for project development. External funding will always be considered before the use of internal council funds. Finance options include:

- Grants: The Climate Change Act and agenda to achieve a green recovery from Covid-19 have given rise to a number of climate change and energy efficiency funds. These will be interrogated to determine if any funding streaming are suitable for projects within Peterborough.

- Match-Funding: Grant awarding bodies and other third-party funders may offer part funding for projects with the stipulation that the council funds the remaining costs.

- Invest to Save: Projects funded via invest to save budgets will deliver future savings to the council. Business cases for proposals are required to demonstrate how the cost of borrowing will be covered and show how the individual scheme is self-financing and so has no overall negative impact against the council's long-term financial position.

- Internal Resources: Schemes may also be considered that require investment through the medium term financial strategy (i.e. carry an additional cost to be factored into the budget, subject to approval) where they contribute towards delivery of service improvements, or to achievement of council priorities. This includes funding for revenue schemes or financing the borrowing for capital schemes. Should any schemes be identified they will undergo business case development and appropriate approvals will be sought.

Offsetting

For an organisation to become net zero carbon, it must capture or offset as many greenhouse gas emissions as it is responsible for emitting, including the organisation's scope 3 emissions where calculable. Validated offsetting schemes exist in which organisations can financially contribute to 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. It is deemed that there are additional projects that could be done to lower the council's gross emissions and any available funds should prioritise this work before offsetting is considered. Should this position change in the future

and all viable projects to reduce emissions were already completed, then the approach to offsetting may be reconsidered.

Project management

Successful implementation and delivery of the action plan requires a robust, transparent governance structure which will ensure strategic ownership of the council's carbon reduction aims. This governance process will bring together the diverse range of projects undertaken throughout the council which contribute to the organisation's overall environmental impact.

Identifying Projects

The council is committed to identifying opportunities to reduce carbon emissions across all areas of its operations.

There are a number of routes to identifying carbon reduction projects.

- A core group of officers, representing key service areas, has been identified. These officers will meet on a regular basis in order to discuss ongoing and forthcoming projects. This allows early conversations about opportunities to reduce carbon to take place.

- Carbon literacy training is being delivered to officers and councillors. The training equips attendees to consider climate change in project development and requires delegates to make climate action pledges to reduce organisational emissions. This process will directly create a series of carbon reduction projects and will empower officers and councillors to identify projects in the future.

- Service reviews will be undertaken to determine activities of high emissions and projects to reduce these. Projects will focus on reducing organisational and city-wide emissions.

- Decisions taken by the council are subject to a Carbon Impact Assessment (CIA). Responsible officers are required to undertake a review of their project/decision and consider the impact it will have on the council's target to achieve net-zero carbon emissions for the organisation and the city. A summary of the CIA is included in the accompanying governance report to enable the relevant decision maker to make an informed decision considering the impact of carbon emissions. This process enables officers and councillors to consider the potential impacts on carbon emissions throughout the project design and decision-making process.

- Change Champions are a group of council officers who work across various service areas. A number of change champions have already undertaken carbon literacy training to help ensure climate change is a high priority across service delivery. Change Champions will also help ensure that there is local support to guide project development to reduce carbon emissions.

Initiating Projects

Before any project is initiated the relevant lead council officer will ensure that all of the necessary procurement and governance steps are undertaken. Consideration will be given to any communication activity that may be required.

Monitoring Projects

The impact of individual projects will primarily be monitored by analysing emissions data, accompanied by other relevant available data. Data will be used to ensure resources are directed to projects with the most significant impact. Where appropriate, engagement activities will be undertaken to monitor the impact of projects. Programme management will be undertaken centrally to ensure that all projects progress.

Reporting Progress

Each year the council will produce an annual report detailing the emissions arising from all emissions sources within the organisation's operational boundary as well as reporting progress on previous climate change commitments.

Climate Change Working Group

The Climate Change Working Group is a cross-party group of elected members, who meet regularly to discuss strategic direction for the climate change programme, including mitigation of council and city-wide carbon emissions and adaptation to climate change. The working group is a vital part of the governance structure of the programme, inputting into project identification, development and monitoring.

Council adoption / approval

Any new policy which requires Cabinet or Council adoption will be developed in line with the council's governance process.

City-wide climate action plan

When declaring a climate emergency, Peterborough City Council made two commitments. Alongside becoming a net zero organisation by 2030, the council also committed to helping support the Peterborough to become a net zero carbon city by 2030.

Update on the development of a city-wide climate action plan

Action on this second commitment will be the focus of a plan due to be released later in 2022. The council previously intended to release the city-wide climate action plan earlier, however it was deemed beneficial to delay this to ensure that several activities could influence strategic direction of the plan. These include:

- A local area energy plan for Peterborough is due to be completed by April 2022. This will evaluate current and future energy demands for the city, considering electricity consumption and heating in buildings, retrofitting of buildings to improve energy efficiency and electricity demands for electric vehicles. The local area energy plan is expected to produce an indication of areas suited to different low carbon heating solutions as well as a pipeline of projects for which the council can seek funding or investment to commission.

- The Cambridgeshire and Peterborough Independent Commission on Climate report "Fairness, nature and communities: addressing climate change in Cambridgeshire and Peterborough" was released in October 2021. This report made a series of recommendations to reduce carbon emissions across the region.

- The Peterborough Climate Change Partnership was established in 2021. Local organisations with an interest in reducing environmental impacts are welcome to join. Early work of the group has led to the development of a Peterborough Climate Commitment, in which organisations agree to measure, monitor and act to improve upon their impact to the environment. Peterborough City Council has signed up to this pledge.

- The Cambridgeshire and Peterborough Combined Authority and the New Anglia Local Enterprise Partnership have commissioned the development of an alternative fuels strategy for the region. This is expected to produce recommendations to achieve carbon reduction across the transport sector.

As well as information and views from these sources, stakeholder engagement will also be essential for the development of the city-wide action plan.

Stakeholder engagement

Stakeholder engagement is a key aspect to the programme.

- **Public engagement** A programme of public engagement will support the development of the city-wide climate action plan. The aims of which will be to inform residents of climate impacts and carbon reduction choices and gather input into the design of the city-wide plans. Information from related public engagement programmes, such consultations on the Local Transport and Connectivity

Plan and the Local Area Energy Plan, may be used to provide additional insight into the climate change programme

• **Business engagement** The Peterborough Climate Change Partnership group of local organisations has recently been established. Business engagement plans will be developed in discussions with this group.

• **Schools** As well as potentially reducing organisational carbon emissions, schools also play a vital role in education and behavioural change. The council intends to work with all local schools (both maintained and academy schools) to prepare a bespoke action plan for schools. The council is recruiting a schools climate change engagement officer to work closely with pupils to enable them to lead carbon reduction projects across their school.

• **Parish councils** Parish councils have a vital role in helping to meet the city's ambitious targets. Parish councils generally have a relative low organisational carbon impact but can have a significant role championing change within its local area. Peterborough City Council can offer support to parish councils in the development of their own climate action plans.

• **Councillors** Peterborough City Council will work with its elected members to ensure resident input is considered in action planning. Carbon literacy training will be offered to councillors to support members in communicating the impact of climate change and the benefits of carbon reduction projects.

• **Other Local Authorities** The council works closely with Cambridgeshire local authorities and the Cambridgeshire and Peterborough Combined Authority. Resources and expertise are shared across a wide range of topics and there is close collaboration in the development of the combine d authority's climate action plan.

A Just Transition

A just transition is an important concept throughout climate change action. The Cambridgeshire and Peterborough Independent Commission on Climate identified a set of principles to follow to ensure that climate change plans follow a just transition[5].

Different members of our communities will be impacted differently both by climate change and by the actions to tackle climate change, and so our approach for climate change action must be fair to all. The benefits of addressing climate change should be shared by all and everyone should have equal opportunity to engage with action. The Commission's principles will be embedded into city-wide action plans.

[3] Cambridgeshire & Peterborough Independent Commission on Climate (2021) Fairness, nature and communities: addressing climate change in Cambridgeshire and Peterborough October 2021

Appendix A

Methodology used to calculate the Council's carbon footprint

Defining The Scope

The starting point for carbon management is to accurately establish the scope of the emission sources to be used to calculate the emissions baseline and subsequent carbon footprint updates. The scope of the baseline includes the required types and sources of emissions over a defined timescale. The baseline is a fixed point against which a reduction target can be set and future performance monitored.

Emissions-releasing activities are classified into three groups known as scopes. Scopes are defined in the Greenhouse Gas Protocol Corporate Standard as follows.

Scope	Definition / Activity
1 (Direct)	**Emissions from sources that are owned or controlled by the organisation**
Fuels	Fuel sources combusted at a site or in an asset owned or controlled by the organisation.
Refrigerants	Refrigerants that leak from air-conditioning equipment.
Passenger vehicles	Travel in cars and on motorcycles owned or controlled by the organisation.
Delivery vehicles	Travel in vans and heavy goods vehicles that are owned or controlled by the organisation.
2 (Indirect)	**Emissions that are a consequence of the organisation's operations, but occur from sources owned or controlled by another company**
Electricity (grid)	Electricity used by an organisation at sites owned or controlled by them.
3 (Other Indirect)	**Emissions that are a consequence of the organisation's operations, which occur at sources which they do not own or control**
Business travel	Travel for business purposes in assets not owned or directly operated by the organisation.
Hotel stays	Overnight hotel stays for work purposes.
Material use	Process emissions from purchased materials.
Waste disposal	Emissions from end-of-life disposal of different materials using a variety of different disposal methods.
Water supply	Emissions from water delivered through the mains supply network.
Water treatment	Emissions from water returned to the sewage system through mains drains.
Transmission & Distribution	Emissions associated with grid losses (the energy loss that occurs in getting the electricity from the power plant to the organisations that purchase it).
Well-to-Tank (WTT)	Upstream emissions of extraction, refining and transportation of a primary fuel source prior to its point of combustion.

Table 1: Greenhouse gas emission scopes and associated emission releasing activities[10]

[10] Department for Business, Energy and Industrial Strategy (2019). Environmental Reporting Guidelines: Including streamlined energy and carbon reporting requirements https://www.gov.uk/government/publications/environmental-reporting-guidelines-including-mandatory-greenhouse-gas-emissions-reporting-guidance

The Organisational Boundary

The organisational boundary is defined by establishing what activities and functions are included in scope for the purpose of determining the council's emissions, and what activities and functions are out of scope. This stage of the process involves reviewing the council's operations to determine activities that give rise to carbon emissions.

In most organisations greenhouse gas emissions are reported for every operation which is owned and operated by the organisation or where there is financial control. The council has a complex operational structure, which includes a portfolio of council-owned buildings which are leased to third parties, where the council purchases the energy but does not influence energy use. These buildings have also been included in scope.

In time, the council aims to report upon all emissions arising from its purchased goods and services, however as of yet the only contracts which report into the council's scope 3 emissions are the Aragon and Milestone contracts.

Vivacity was an externally operated organisation, running cultural services within Peterborough. This service is now provided in-house, and so previous Vivacity emissions are now reported in Peterborough City Council totals.

The council's carbon footprint is calculated using the following sources.

Scope	Typical activities for a local authority organisation		Identified Council emission sources
1	**Buildings**	Production of electricity, heat or steam	• Gas used in buildings which is purchased by the council. The building may be operated by an external organisation.
	Transport	Fleet transportation	• Travel in vans and heavy goods vehicles operated by the council.
	Fugitive	Hydrofluorocarbons (HFC) emissions during use of refrigeration and air-conditioning equipment	• Refrigerant top-ups for air-conditioning units.
2	**Buildings**	Consumption of purchased electricity, heat or steam	• Electricity used in buildings which is purchased by the council. The building may be operated by an external organisation. • Electricity used in streetlighting and car park lighting which also includes road signs and illuminated bollards
3	**Purchases**	Production emissions from purchased goods and services	Included where available (see below)
	Transport	Transportation, employee business travel, employee commuting	• Staff business travel and accommodation. • Employee commuting – excluded (see below). • Buildings and fleet used to deliver services by Milestone and Aragon.

Table 2: Identified in scope council emissions[11]

Excluded Emissions

The council has deemed that the following emission sources remain out of scope for the council's carbon footprint calculation. Reasons are detailed below:

Scope 3

- **Water supply and treatment** – Water supply emissions arise from the treatment and pumping from the water source to the tap. It was deemed that the emissions contribution from water consumption is too insignificant to justify the additional reporting burden. Water consumption is not currently calculated at an organisation wide level, and so data is not easily accessed.
- **Waste water treatment** - It was deemed that the emissions contribution from waste water treatment is too insignificant to justify the additional reporting burden. Waste water is not currently calculated at an organisation wide level, and so data is not easily accessed.

[11] World Resources Institute and World Business Council for Sustainable Development (2004) The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition). Corporate Standard | Greenhouse Gas Protocol (ghgprotocol.org)

- **Waste disposal** – This plan excludes emissions arising from city-wide waste treatment. Details on this source of emissions will be included in the city-wide climate change action plan. The rationale for this decision is that this waste is a citywide resource, some of which currently generates enough electricity to power over 16,000 homes through the Energy Recovery Facility, and therefore offsetting of these emissions should be accounted for on a city-wide level.
- **Employee commuting** – Whilst the emissions relating to employees travelling for the purposes of work for which expenses are claimed is included within this report, the emissions arising from employees travelling from home to work are not included. This approach is accepted as part of the Greenhouse Gas Protocol guidance.
- **Peatland** –The council holds a farm estate of approximately 3,000 acres, a proportion of which is comprised of peatland soils. Whilst healthy peatland is able to capture and store carbon emissions, degraded soil emits carbon. At this stage there is no data available for inclusion in this plan. The council is committed to not only understand the emissions arising as a result of its agricultural land but also to seek opportunities to reduce emissions both through revised land management practices and development of energy projects to bring forward local decarbonised heat and power.
- **Purchased goods and services** – The largest exclusion relates to purchased goods and services. Data is not yet available for the majority of the council's purchases, this data will be added when available and so the calculated carbon footprint of the council is expected to rise over the coming years due to improved reporting.

The council will review the scope on an annual or biennial basis to ensure that data is collected from all relevant sources.

Data Collection

The emission data used to calculate the carbon footprint was gathered from different sources including: invoices received by the Council, annual energy statements from utility providers, vehicle fuel data, property services and third party providers (i.e. Aragon and Milestone). Work continues to ensure that this data is robust and systems are in place to ensure ongoing timely and accurate collection of data.

Energy Type	Source	Data Quality/Estimation techniques
Gas	Energy invoices and annual energy statements from suppliers. Collated data from third party providers.	Where estimations have been used, records are held with source data. **Methods include:** Annualising consumption or average data calculated using bookended data.
Passenger vehicles	Staff mileage claims, fuel purchased and vehicle log books.	Annualising consumption where required
Fleet vehicles	Fuel purchased and vehicle log books	Annualising consumption where required
Electricity	Energy invoices and annual energy statements from suppliers. Collated data from third party providers.	Where estimations have been used records are held with source data. **Methods include:** Annualising consumption or average data calculated using bookended data.
Renewable energy	Online renewable energy portal	N/A
Business travel	Council data records	N/A

Table 3: Source of data by energy type

Calculating emissions

To calculate CO_2e emissions, raw usage data (such as kWh of electricity used) is multiplied by a conversion factor.

Conversion Factors

The carbon conversion factors used for this action plan are the 2020 UK Government published carbon conversion factors. The council uses the conversion factors which match to the year in which the majority of the relevant financial year sits. For instance for the financial year 2020/21, the 2020 conversion factors are used.

The key conversion factors used are as follows:

Energy Type	Conversion factor
Fuels	
Natural Gas	0.18387 kg CO_2e / kWh (Gross CV)
Propane	0.21411kg CO_2e / kWh (Gross CV)
Diesel (average biofuel blend)	2.54603 kg CO_2e / litre
Petrol (average biofuel blend)	2.16802 kg CO_2e / litre
Electricity	
UK electricity	0.23314 kg CO_2e / kWh (Gross CV)
Vehicles (passenger, delivery and business travel)	
Large diesel car	0.32863 kg CO_2e / mile
Average car (unknown fuel type)	0.27584 kg CO_2e / mile
Domestic flights	0.2443 kg CO_2e / km
National rail	0.03694 kg CO_2e / km
Purchases	
Milestone purchased goods and services	Various. Calculated by Milestone
Hotel stays	15.7 kg CO_2e / night
Waste	
Residual waste	21.3167 kg CO_2e / tonne
Recycling	21.3167 kg CO_2e / tonne
Organic waste	10.2039 kg CO_2e / tonne
Inert waste	1.009 kg CO_2e / tonne
Active waste	21.354 kg CO_2e / tonne
Transmission & Distribution	
UK electricity	0.02005 kg CO_2e / kWh
Well-To-Tank	
Various	Various, used as appropriate from 2020 Conversion factors

Table 4: Key greenhouse gas conversion factors[12]

[12] Department for Business, Energy and Industrial Strategy (2020) Greenhouse gas reporting: conversion factors 2020 Greenhouse gas reporting: conversion factors 2020 - GOV.UK (www.gov.uk)

Baseline Year Recalculation Policy

There may be circumstances under which it becomes necessary to recalculate the council's baseline year emissions. If significant changes were to occur, either within the council's organisation or to recognised methodologies, it could challenge the validity of comparing to existing data. To ensure comparisons remain valid, the following baseline year recalculation policy has been developed. This ensures that any significant changes are identified, measured for a recalculation threshold and processed accordingly.

Change scenario	Baseline year recalculation?
Mergers, Acquisitions, Divestitures	
Acquisition of (or insourcing) a facility that did not exist in the baseline year.	Potentially recalculate baseline year emissions depending on likely impact, or correct errors
Disposal of (or outsourcing) a facility to another company.	Potentially recalculate baseline year emissions depending on likely impact, or correct errors
Transfer of ownership/ control of emissions sources. This includes changes in lease status.	No base year recalculation required
Organic Growth and Decline	
Organic growth	No base year recalculation required
Organic decline	No base year recalculation required
Changes in Quantification Methodologies / Errors	
Changes in emission factors or methodologies (e.g. change in activity data) that reflect real changes in emissions (i.e. changes in fuel type or technology)	No base year recalculation required
Changes in measurement methodologies, improvements in the accuracy of emission factors, improvements in the accuracy or availability of activity data or discovery of previous errors/ number of cumulative errors	Potentially recalculate baseline year emissions depending on likely impact if data is available for baseline year, or correct errors

Table 5: Baseline year recalculation policy

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