

Full Council

16th July 2019



Title

Climate Emergency – The Mayor's Response

Recommendation

To note the Mayor's response to the Climate Emergency and the actions he proposes.

Summary

In November 2018 Full Council passed a motion which declared a Climate Emergency and asked the Mayor to report back to Council describing the action he and the Council will take. It was agreed with all political parties that this report would be presented to the July Full Council as the May Council does not take business. This report provides the Mayor's response and provides background information.

The significant issues in the report are:

The Mayor reiterates his declaration that we are in a climate emergency and formally adopts the goal of Bristol becoming a Carbon Neutral City by 2030.

The Mayor has created new Governance structures to lead the city's response to the climate emergency including:

- * a new City Office Environmental Sustainability Board which he is chairing; and
- * an Advisory Committee on Climate Change to advise the city boards.

This will enable us to develop a One City Climate Strategy for Bristol.

The Mayor sets out the actions he is taking immediately to respond to the threat of climate change in a way which is hopeful, inclusive and ensures that everyone in the city benefits from the opportunities of creating a carbon neutral city.

The Mayor identifies some of the areas where additional Government action is needed and commits to working with Core Cities to put this case to Government.



Policy

1. The UK Climate Change Act 2008 sets a statutory target to reduce UK greenhouse gas emissions by 80% from 1990 by 2050. In May 2019 the UK Committee on Climate Change recommended that the UK Government increase the statutory target to Net-Zero greenhouse gas emissions by 2050. The Government has now adopted this target.
2. In parallel, the UK Climate Change Act established the National Adaptation Programme. The corresponding UK Climate Change Risk Assessment identifies 6 priority risk areas: flooding, high temperatures, water supply shortages, natural capital, food production; and pest and diseases.
3. Bristol City Council campaigned for the Climate Change Act and the targets there in and since then has been one step ahead of Government targets. In 2015 Bristol City Council adopted a target for the city to be Carbon Neutral for Direct Emissions¹ by 2050. This includes electricity and gas used in the city and road transport in the city.
4. The City Council has also been working to make the city more Climate Resilient to ensure that we are prepared and can adapt to changes in the climate which will occur in the coming decades, from emissions that have already taken place and future emissions.
5. In November 2018 Bristol City Council unanimously passed a motion calling on the Mayor to:
 1. *Declare a ‘Climate Emergency’;*
 2. *Pledge to make the city of Bristol carbon neutral by 2030, taking into account both production and consumption emissions [Nb. referred to in this paper as Direct and Indirect emissions];*
 3. *Call on Westminster to provide the powers and resources to make the 2030 target possible;*
 4. *Work with other governments (both within the UK and internationally) to determine and implement best practice methods to limit Global Warming to less than 1.5°C;*
 5. *Continue to work with partners across the city and region to deliver this new goal through all relevant strategies and plans;*
 6. *Report to Full Council within six months with the actions the Mayor/Council will take to address this emergency.*

The full text can be found on the Council’s website.

6. In July 2019 the Mayor led a motion at the Local Government Association conference to declare a Climate Emergency which was unanimously endorsed by 435 councils.
7. Please note that this document refers to emissions of “carbon” or “carbon dioxide”. This should be considered shorthand for all greenhouse gas emissions, not just carbon dioxide.

¹ Direct emissions refers to Scope 1 and 2 emissions in the Greenhouse Gas Emissions protocol and include the use of electricity and gas and local transport emissions.

Consultation

Internal

8. The Mayor welcomed the unanimous and cross party support for the motion. He therefore invited all parties to join a working group to generate ideas for how the council and city could become carbon neutral. This group has worked hard to generate a long list of ideas which all four parties agree on. This list of ideas has been studied by officers and compared with our existing activities and plans and the powers and resources which the city council has. The full list is included in Annex 1 to the Mayor’s report included in Appendix 1.
9. Some of the suggestions could be delivered by the city council in the short term and reference to these suggestions is included in the text of this report. A few of the ideas and are included in the Mayor’s action plan include:
 - Assessing all major projects for their impacts on carbon emissions
 - Implementing a Carbon Budget which sets out the projects which will be carried out over the next few years, learning from the experience of our fellow European Green Capital, Oslo.
 - Reducing the use of single-use plastic in the city, starting with the Council.
10. Many ideas were already underway to some extent but needed to be developed at a greater scale or pace to accelerate progress, however these require additional resources, or national action. The Mayor’s action plan is cross-referenced to these ideas and where appropriate are being used to inform the Ask of Government.
11. Other suggestions will be carried forward for consideration in the development of the Bristol One City Climate Strategy to be developed by the City Office Environmental Sustainability Board.
12. A full response to each of the suggestions is included in these papers and feedback has been provided to the Cross Party Working Group.

External

13. Regular meetings with other Core Cities to discuss approach and make a clear call for Government action.
14. The development of the climate strategy referred to in the action plan will be undertaken with partners and wider stakeholders.

Context

15. In 2018, the Intergovernmental Panel on Climate Change (IPCC) published a report which advised that we must limit global warming to 1.5°C, as opposed to the previous target of 2°C. Their review of over 6,000 sources of evidence found that, with a rise of 1.5°C, there would be risks to health, livelihoods, food security, water supply, human security and economic growth. A rise to 2°C would be even more catastrophic. It warned that we have only 12 years left within which to take the serious action required to avert this crisis and avoid the worst impacts.
16. As well as being impacted by the global effects we will be directly affected by climate change impacts in Bristol. We are working with the Meteorological Office to produce headline predictions for Bristol using the latest climate information available (UKCP18). These changes are likely to have significant impacts:
 - An increase in extent, depth and frequency of flooding from surface water, rivers and the sea due to sea level rise, storm surges and increasing intensity of rainfall. Although the trend is for drier summers, intense storms will also increase.
 - Hotter summers will also lead to increased heat stress, particularly on vulnerable members of the community such as the elderly.
17. The Full Council motion (Paragraph 5) to declare a climate emergency was made in response to the findings of the IPCC report and other information. Following the lead of cities around the world, Bristol was the first UK Local Authority to declare such an emergency. Since then, a further 89 UK Local Authorities have followed suit, including most of the core cities and three of the West of England Authorities.
18. We have been actively trying to reduce the city’s carbon emissions since 2004 when we adopted our first climate strategy. Since 2005, Bristol has seen a 35% reduction in its carbon emissions from energy and transport in the city and is in line the adopted targets. These have been achieved mainly by the increasing supply of renewably generated electricity both locally and nationally and increases in energy efficiency in buildings. Emissions from transport did reduce initially but have not started to rise.
19. Since being elected, the Mayor, and his Cabinet colleagues, have been taking action across their portfolios to make progress and this will be accelerated and scaled up as we develop the Bristol One City Climate Strategy with partners. There are clear synergies between reducing emissions and building resilience which will be exploited through production of the Strategy.
20. **Councillor Dudd, Cabinet Member for Energy and Transport, has committed in the Council’s Business Plan to delivery of significant low carbon energy infrastructure in the city** including expansion of the District Heating Network to provide heat to buildings around central Bristol from low carbon sources, such as taking heat from the floating harbour with heat pump technology.
21. Housing is a key area of carbon emissions in Bristol (36% of direct emissions) but we need more housing. Councillor Paul Smith, Cabinet Member for Housing, brought proposals to Cabinet to provide supplementary grants of up to £10,000 for affordable rent or social rent homes to help

them meet the energy and sustainability standards in the current Local Plan. From the overall 19/20 Budget of £14m, it is expected that about £4.3m will be available to fund new schemes, including a proportion to meet energy and sustainability standards and in the next 4 years a proportion of the £38m Affordable Housing Fund Grant. This will ensure that future occupiers live in warm, energy efficient homes with affordable energy bills, as well as affordable rent or shared ownership mortgages.

22. Most of our carbon emissions from housing come from existing homes, many of which are inefficient. Cllr Dudd is therefore managing the Warm Up Bristol programme, which aims to make the private housing stock in Bristol more energy efficient, and the Energy efficiency programme in council homes.
23. Bristol is a rapidly growing city and alongside the housing we are planning for significant amounts of commercial development in our new Local Plan. Currently, non-domestic buildings account for 30% of the city’s direct carbon emissions. **Councillor Nicola Beech, Cabinet Member for Strategic Planning and City Design, has developed a suite of policies in the local plan to create sustainable, zero carbon new development** to ensure that we don’t move away from carbon neutrality as we grow our city. Consultation closed in May 2019 and officers are considering those responses which will inform the publication version in 2020.
24. Transport is the final sector which generates direct carbon emissions in the city. Currently local road transport accounts for 33% of direct local emissions. This has not reduced significantly since 2005 – only 7%. **Councillor Kye Dudd, Cabinet Member for Transport and Energy has developed sustainable transport proposals as part of the Bristol Transport Strategy.** This includes **expanding the public electric vehicle charging network** in Bristol to give more people confidence to make the switch to electric now, rather than wait for petrol and diesel cars to be phased out under government plans. As part of this the Mayor is asking all public sector organisations in Bristol to commit to at least 30% of their fleet using non-fossil fuel by 2026 as agreed in the One City Plan. In addition, the Mayor continues to progress towards a bus deal, to double public transport usage and to develop proposals for the city’s first mass transit system. The mass transit proposals will be ultra low emissions.
25. Much of the Council’s focus is on the direct emissions of carbon from energy and transport in the city, but the things which we purchase as citizens and organisations have a huge carbon footprint. Food is a significant part of this and so **Councillor Asher Craig has developed with Partners an ambitious programme for Bristol to become the UK’s first Gold rated city in the Sustainable Food Cities Award.** This will recognise the great work being done across the city by partners to create a food system that is good for people, places and the planet.
26. We have all become aware of the impact of plastics and **Cllr Steve Pearce, Cabinet Member for Waste, Commercialisation and Regulatory Services, is working to reduce this impact in the city and on our wider environment. This includes the Clean Streets campaign, creating a plan for reducing single use plastics/ polystyrene take-away containers in Bristol City Council premises and delivering a new recycling centre in Hartcliffe.**
27. The Mayor has also brought forward plans to tackle local air pollution from transport under the **Clean Air Plan.** Whilst the objective of this is to reduce pollution from the gas Nitrogen Dioxide and small particulates, which causes immediate harm to human health, the proposals are also

likely to reduce carbon emissions from transport.

- 28. The Mayor with partners is implementing a flood defence scheme to protect Avonmouth & Severnside and developing a proposal to protect the city centre from flooding. These schemes will address the increased flood risk as a result of climate change.**

Proposal

- 29.** The Mayor supported the Climate Emergency motion and this section summarises the actions he is proposing to take in response.

A climate emergency

- 30. Firstly the Mayor reiterates his declaration that we are in a climate emergency.**
- 31. The Mayor also calls on all city organisations to recognise the climate emergency and set themselves targets** to rapidly reduce emissions and prepare for the impacts of climate change. Already we have seen declarations from leading organisations including the University of Bristol and We the Curious.
- 32. The Mayor also adopts Carbon Neutrality by 2030 as a goal of the city council and asks that all Councillors support him in this.** The crucial part of this is how we accelerate our action to rapidly reduce emissions.
- 33.** Whilst rapidly reducing our contribution to climate change we also need to prepare for its impacts on the city. **The Mayor therefore also commits to the city council working with partners to increase the climate resilience of the city.**
- 34.** The Mayor recognises that this needs to be a whole city response and this report sets out some of the things that the Mayor is doing to help support that. He also recognises that it also needs to a whole council response and that Cabinet Members and all services must do everything they can within their existing powers and resources whilst we ask Government to provide the additional ones that we need.
- 35.** The Mayor’s Climate Emergency Action Plan is set out in Appendix 1 in more detail and the following section provides a brief summary.
- 36.** The Mayor’s Climate Emergency Action Plan;
- Provides an initial high level assessment of the city’s emissions, highlighting the main sources, such as energy, road transport, aviation, food and other goods and services we buy which may be made anywhere in the world.
 - Describes the recent trend in direct emissions from energy and transport, showing the good progress made since 2005 with the city on track to have achieved its target of a 40% reduction in emissions by 2020. It also notes some of the challenges such as rising emissions from road transport in the city in recent years.

- Explores likely future emission scenarios for the next decade. It concludes that committed plans of the UK and Bristol could deliver a 28% reduction in emissions by 2030, and that the more ambitious plans set out in local and national strategies could deliver 46% reduction in emissions by 2030. This provides a basis for developing a new strategy to accelerate action and close the gap to achieve carbon neutrality.
- Demonstrates how the Mayor and Council are leading by example in reducing the council’s emissions and sets a clear target for the City Council to be Carbon Neutral for its emissions by 2025 and to develop a plan to quantify and minimise its indirect emissions.
- Sets out the city leadership that the Mayor has demonstrated by creating and chairing the new Environment Sustainability Board as part of the City Office, bringing together key partners from around the to create a shared One City Climate Strategy for Bristol.
- Sets out how the city will benefit from the expertise in the Universities and other organisations by the creation of an Advisory Committee on Climate Change to advise on how we make the city carbon neutral and climate resilient.
- Describes the Mayor’s recognition of the level of concern across the whole city about climate change and a commitment to engaging the whole community in the response to the climate emergency. This includes allocation of funding for a new community engagement programme, to engage and empower citizens, understanding the barriers and enabling everyone to contribute.
- Sets out the existing and new action that the Mayor will take to:
 - Create low carbon jobs and businesses
 - Build and retrofit homes to make them energy efficient and affordable
 - Provide for clean and sustainable travel, including mass transit.
 - Generate clean, renewable energy in the city
 - Reducing the carbon footprint of our consumption
- Describes how the Mayor will work with other cities and partners to share learning, knowledge and to create a clear and compelling call on Government to respond to the Climate Emergency and enable us to create a carbon neutral and climate resilient city.

37. The Mayor will report annually to Full Council on the progress made with the implementation of the action plan.

Other Options Considered

38. The Mayor has considered all the suggestions made by the Cross Party Working Group on Carbon Neutrality and Appendix 2 shows the detailed response to each.

Risk Assessment

- 39.** The proposed Action plan sets out definitive action by the Mayor in regard to the issues which are within the Council’s control and which can be met within the existing resources and powers. It also sets out an approach to secure action by a wide range of partners within the city, giving us the best chance of delivering the scale of city change. Finally work is underway with the Core Cities group to present a clear case to government for them to undertake the national action necessary to achieve the goals.
- 40.** It is therefore considered an appropriate approach to address the risk of climate change for the city.

Public Sector Equality Duties

An Equalities Impact Assessment is not required.

(Equalities advice provided by Duncan Fleming, Equalities and Community Cohesion Officer)

Legal and Resource Implications

Legal

No legal issues arise out of the Mayor’s response to the Climate Emergency. Implementation may give rise to procurement and related considerations which can be advised on once further detail is available.

(Legal advice provided by Sinead Willis, Team Leader, Commercial and Governance Financial)

Financial

The report outlines various activities that BCC are currently committed to to address the climate emergency concerns amongst other things. BCC has spent or committed to spend over £60m to address some of the issues identified in this report. Table 1 below shows BCC existing financial commitment (some in partnership with others).

Table 1	
	£'000
<u>Capital Expenditure</u>	
Low Carbon energy infrastructure	17,237
Housing Grant	4,300
EV charging network	2,000
Avonmouth Severn Flood defence	33,000
	56,537
<u>Revenue Expenditure</u>	
Warm up Bristol	2,200
Clean Air Plan	2,000
Net expenditure	60,737

In addition to the above, the Mayor’s Climate Emergency Action Plan requires £250,000 of new funding currently being sought from an earmarked reserve for specific Mayoral initiatives to facilitate the public engagement programme, the production of a One City Climate Strategy, and the funding of a Climate change training course as outlined in section 5.2, 5.3 and 5.4.

(Financial advice provided by Kayode Olagundoye, Interim Finance Business Partner, Growth & Regeneration)

Personnel

The proposal includes provision for training for senior leaders, councillors and key staff on climate change matters, subject to additional funding (£50K) from the Mayor’s reserves. There are no other HR implications evident at this stage.

(Personnel advice provided by Celia Williams, HR Business Partner – Growth and Regeneration)

Appendices:

Mayor’s Report to Full Council on Carbon Neutrality

LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT 1985

Background Papers:

City of Bristol Carbon Neutrality, CO2 emission baseline and gap analysis
A report for Bristol City Council by Regen

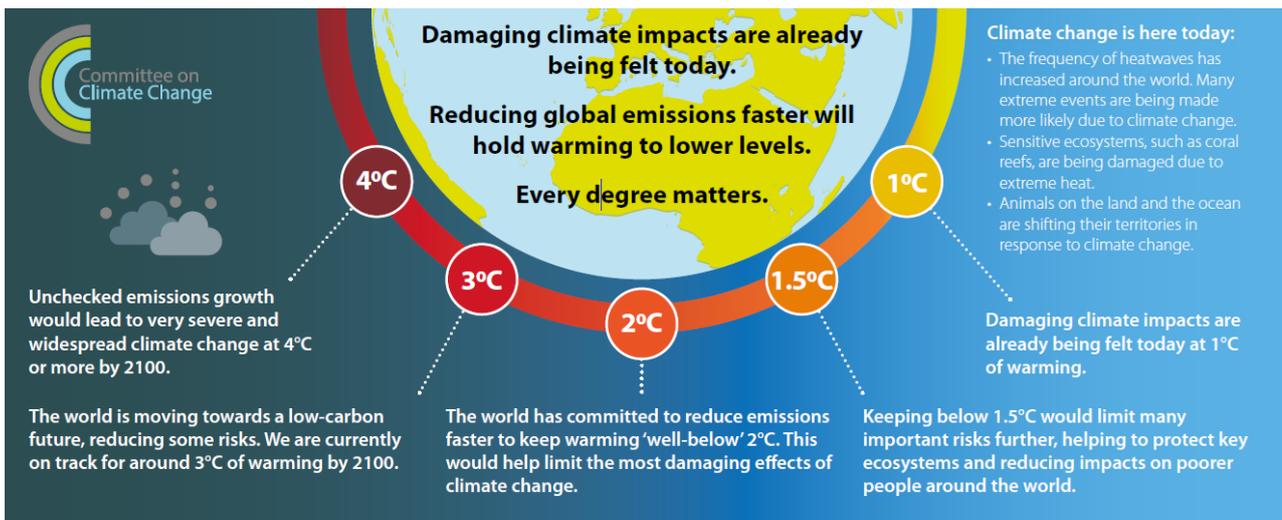
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1. Introduction

1. In 2018, the Intergovernmental Panel on Climate Change (IPCC) published a report which advised that we must limit global warming to 1.5°C, as opposed to the previous target of 2°C. Their review of over 6,000 sources of evidence found that, with a rise of 1.5°C, there would be risks to health, livelihoods, food security, water supply, human security and economic growth. A rise to 2°C would be even more catastrophic. It warned that we have only 12 years left within which to take the serious action required to avert this crisis and avoid the worst impacts.

Figure 1 CCC Infographic on the impacts of different scenarios



2. Bristol City Council’s Motion

2. In response to the IPPC report and other information, in November 2018 Bristol City Council Full Council and the Mayor unanimously passed a motion calling on the Mayor to:
 1. *Declare a ‘Climate Emergency’;*
 2. *Pledge to make the city of Bristol carbon neutral by 2030, taking into account both production and consumption emissions (scope 1, 2 and 3);*
 3. *Call on Westminster to provide the powers and resources to make the 2030 target possible;*
 4. *Work with other governments (both within the UK and internationally) to determine and implement best practice methods to limit Global Warming to less than 1.5°C;*
 5. *Continue to work with partners across the city and region to deliver this new goal through all relevant strategies and plans;*
 6. *Report to Full Council within six months with the actions the Mayor/Council will take to address this emergency.*

3. Where are we now ? Current emissions from Bristol

3. We have assembled a significant dataset to provide an evidence base for strategy making. This is published on the BCC website.
4. The dataset contains baseline sources of energy demand and supply to the city and the associated carbon emissions broken down by sector and sub-sectors and by technology types including emissions emanated from energy use for power, heat and road transport.
5. This is consistent with Scope 1 & 2 emissions as defined by the Greenhouse Gas Protocol but excludes land-use change. These “direct” emissions were chosen because they are the areas that Bristol Council and residents have more direct control. Indirect² emissions emanating from the supply chain and source of goods and services imported into the City (Scope 3) have not been included in that dataset however an estimate is made below based on a per capita allocation of UK data.
6. Bristol’s overall emissions are estimated in Table 1. These show that direct emissions account for approximately 1,600 tonnes of emissions whilst indirect emissions from shipping, aviation and imports are approximately 2,600 tonnes.

Table 1 Estimate of Bristol’s Emissions by source and scope

Scope	Total Emissions – 1,000s tonnes				Per Capita – tonnes			
	1	2	3	Total	1	2	3	Total
Elec, gas and transport in Bristol City Council area	1,034	512		1,546	2.3	1.1		3.4
Motorways in Bristol and other national unallocated energy use	87		12	99	0.2		0.03	0.2
Other UK Emissions, ³ inc shipping and aviation ⁴			142	142			0.3	0.3
Imported Consumption emissions			2,485	2,485			5.4	5.4
Total	1,121	512	2,639	4,272	2.5	1.1	5.7	9.4

² Indirect Carbon emissions refers to Scope 3 emissions in the Greenhouse Gas Emissions protocol <http://ghgprotocol.org/> and include the use of international transport and emissions from the production of goods consumed in the city and waste produced by the city but treated elsewhere.

³ “Other UK emissions” and “imported consumption emissions” are based on a simple per capita allocation of data from UK government estimates. From https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/794557/Consumption_emissions_April19.pdf

⁴ “aviation” refers to the apportionment of the UK aviation footprint to Bristol on a per capita basis – it does not relate to the emissions from Bristol Airport directly

Figure 2 Emissions by Scope 1-3

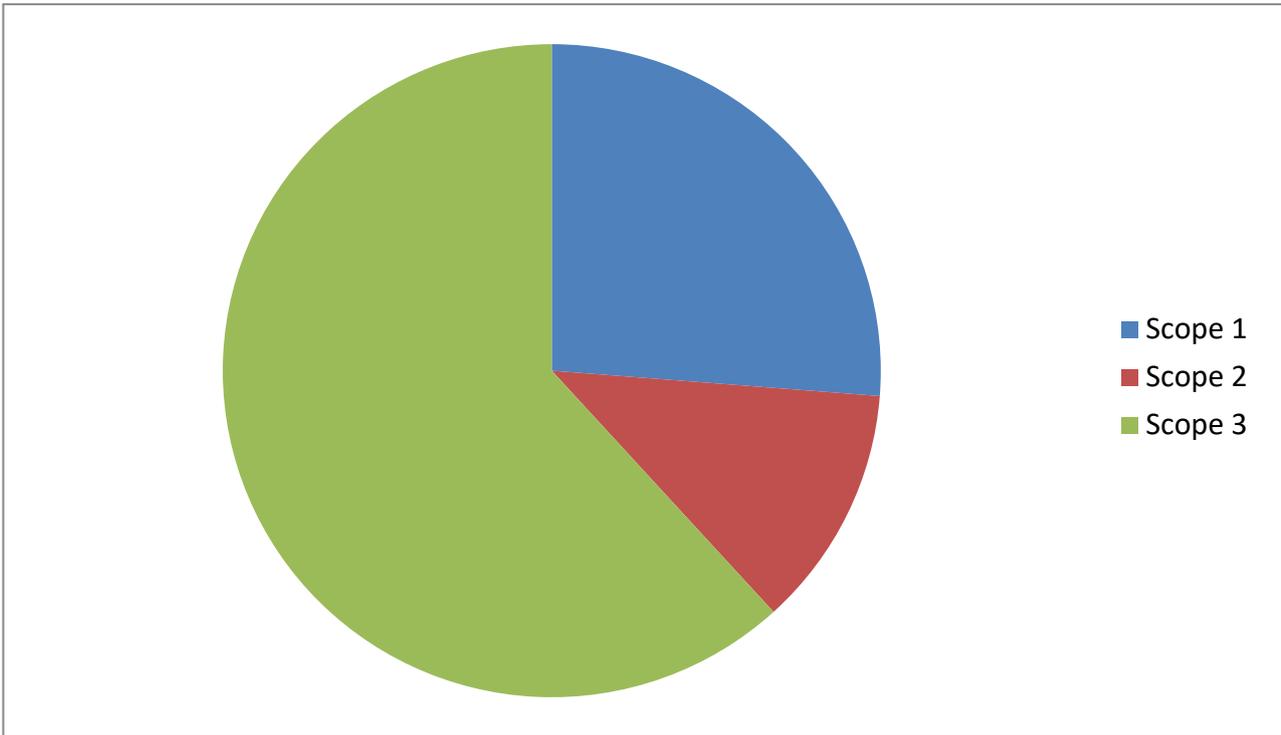
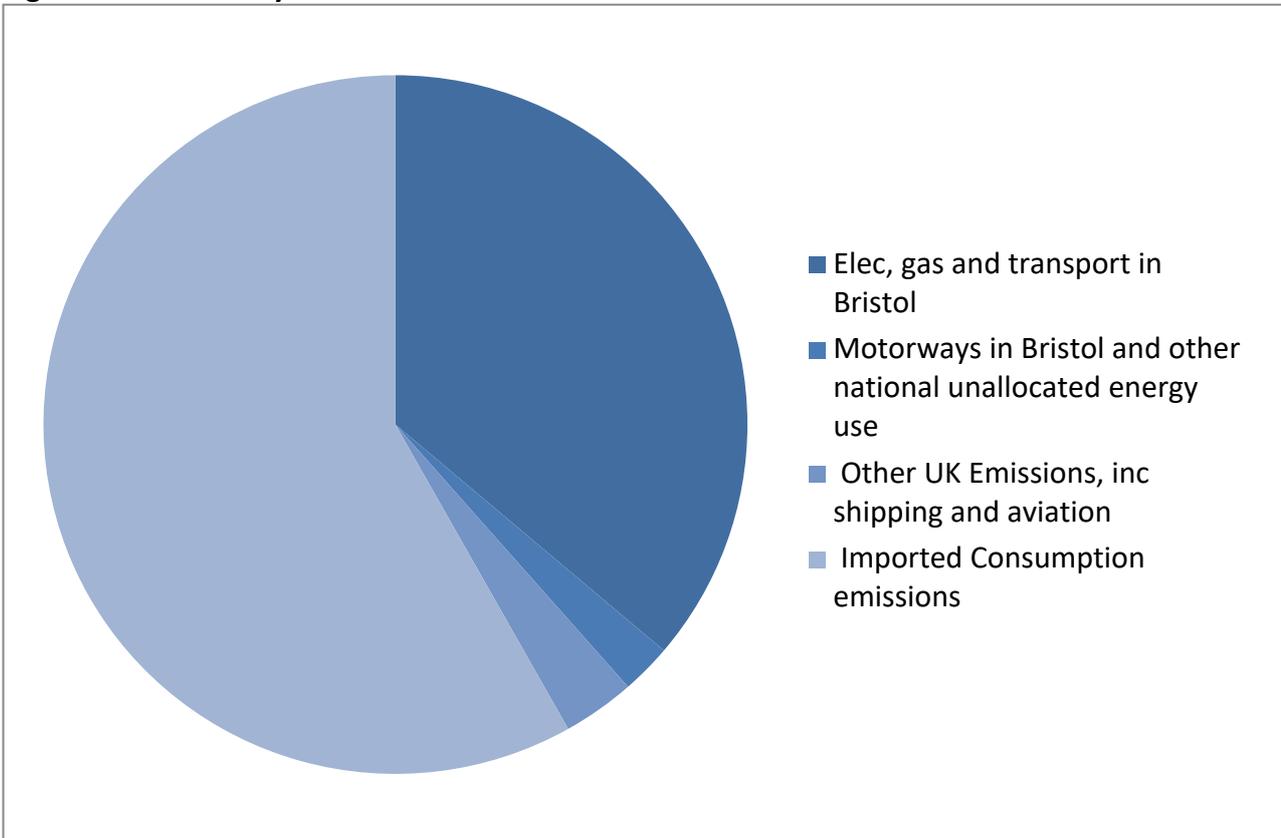
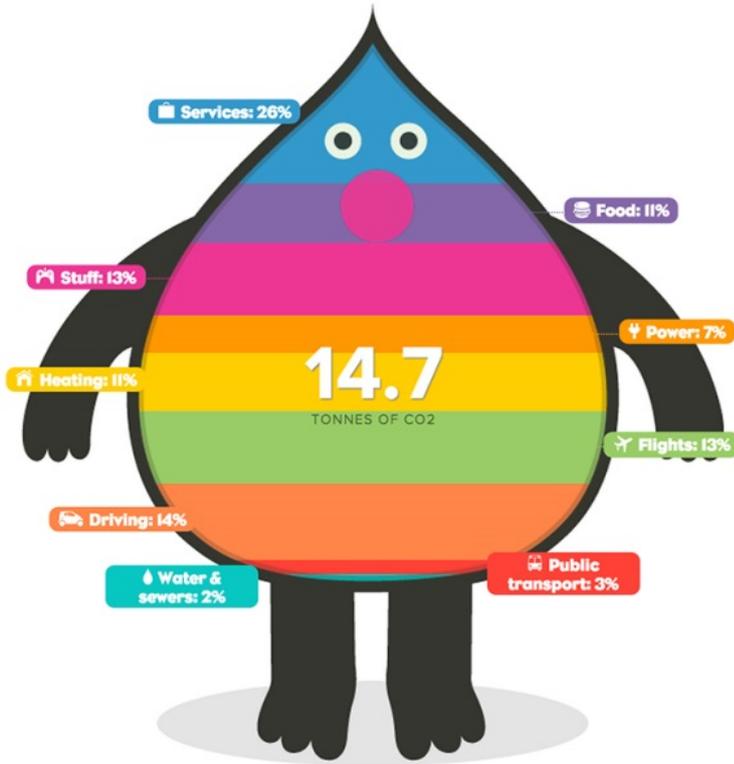


Figure 3 Emissions by Source

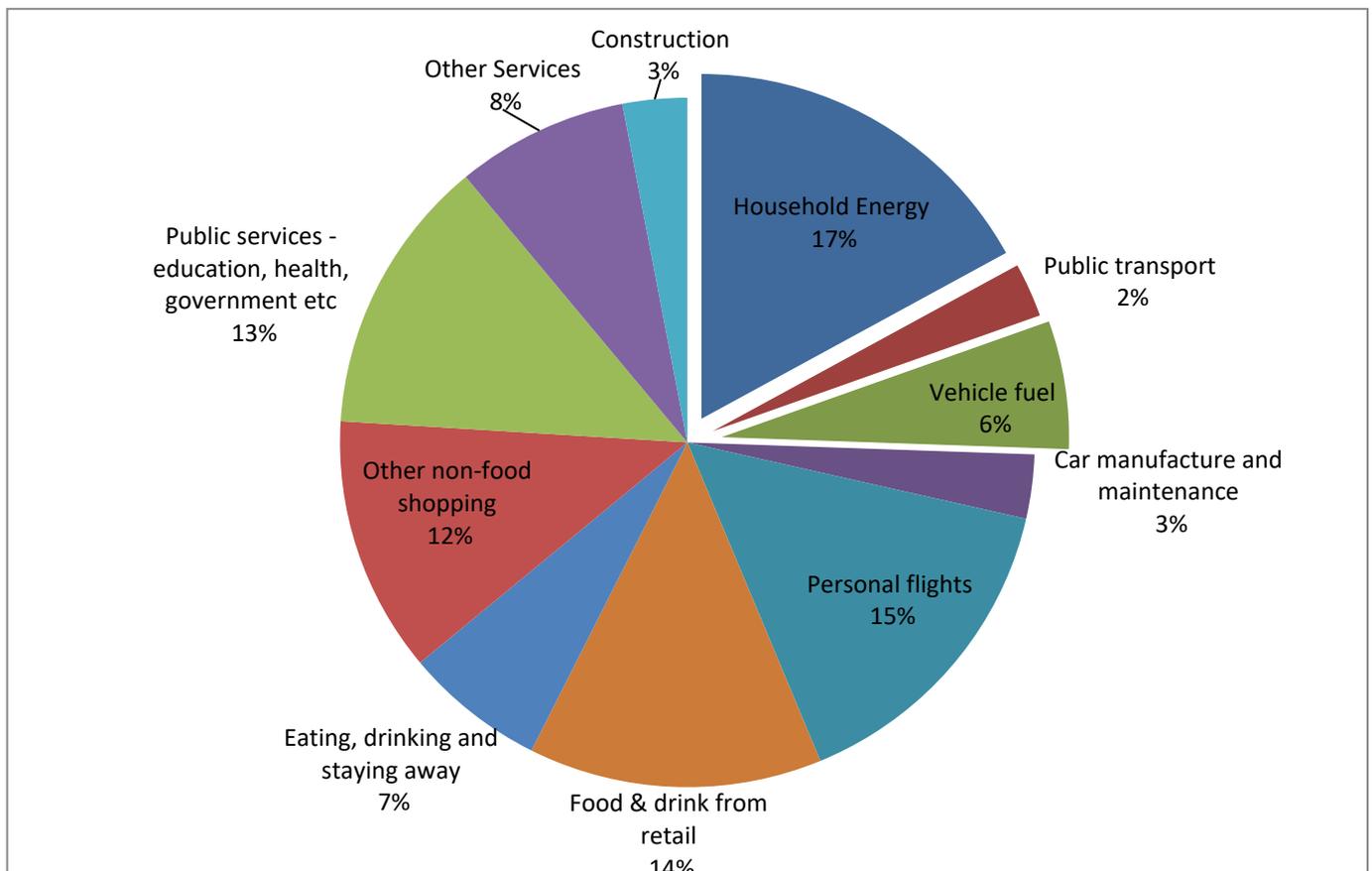


7. The campaign group 10:10 has produced this simple picture of an average UK person’s footprint. This indicates that about 2/3 of emissions are related to consumption rather than local transport and home energy. The details and scope of this assessment is not known and it is included here as an indicative



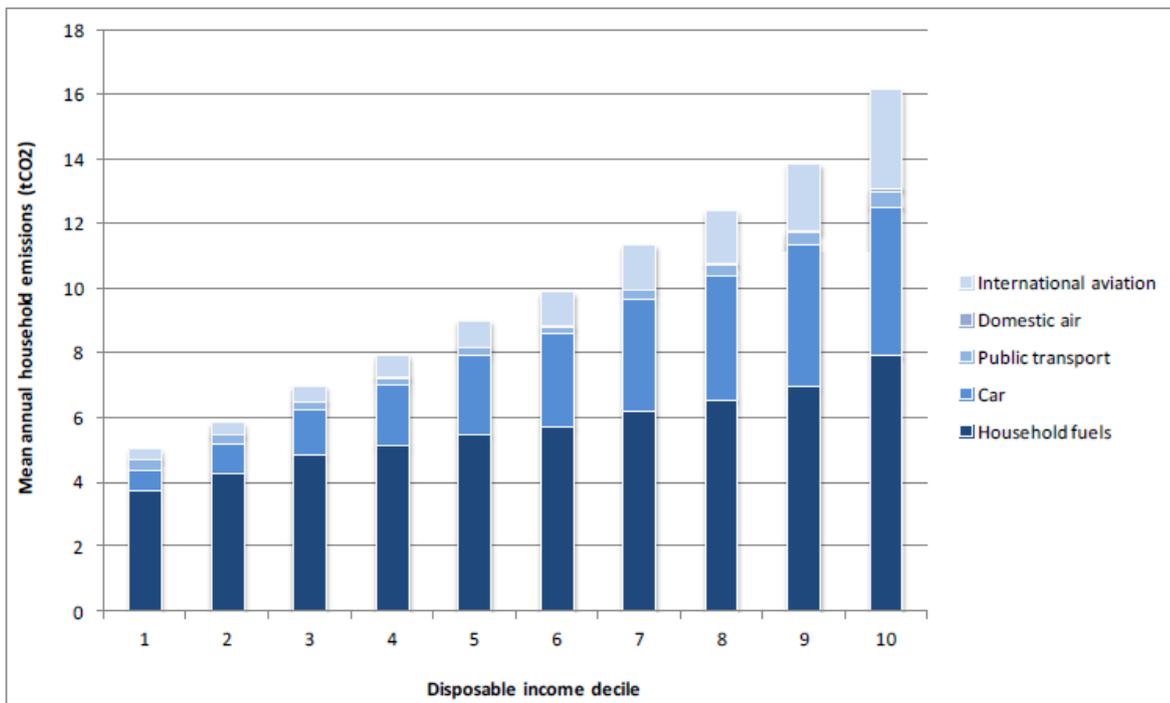
8. In the UK Greater Manchester and Greater London have assessed their whole footprint. There are significant differences between the two cities results and it is considered that data for the City of Manchester are more likely to be similar to Bristol than those of Greater London. The results for Manchester for residents are shown in Figure 4.
9. This shows that about 25% of the emissions are from the home and local transport. Other key areas of emissions are:
- Food and drink – 14%
 - Non-food shopping - 12%
 - Personal flights – 15%

Figure 4 Manchester’s Residents Carbon Footprint



10. Different people have different sized carbon footprints and household income is a key factor in determining this. A study by the Bristol based Centre for Sustainable Energy shows that households with the highest disposable income (highest10%) have footprints for energy use and transport three times the size of the households with the lowest disposable income (lowest 10%).
11. Emissions from private road travel and international aviation account for a high proportion of this differential: international aviation emissions of the highest income group are more than ten times that of the lowest income group, while emissions from private vehicle travel are around 7–8 times as high. A DfT survey of air travel in 2014 found that the 15% of adults in Great Britain who made 3 or more flights made 71% of flights in the preceding year. It is likely that these frequent travellers have higher levels of disposable income.

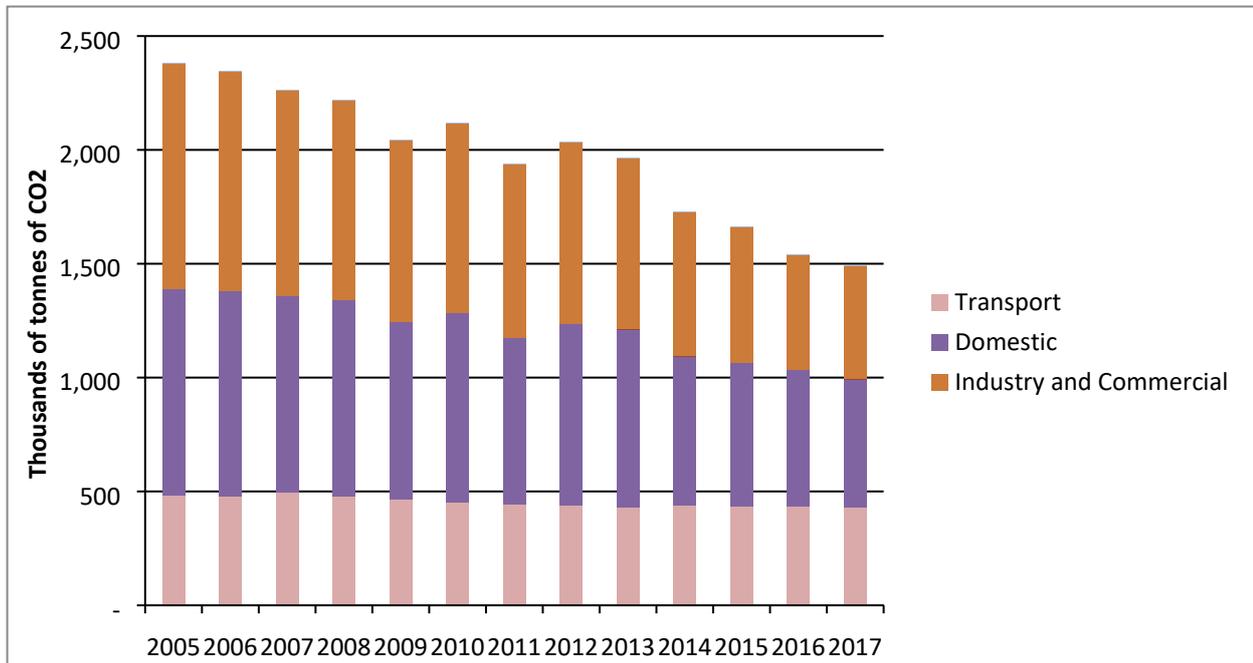
Figure 5 Carbon emissions related to disposable income - UK



4. Recent trend in direct emissions

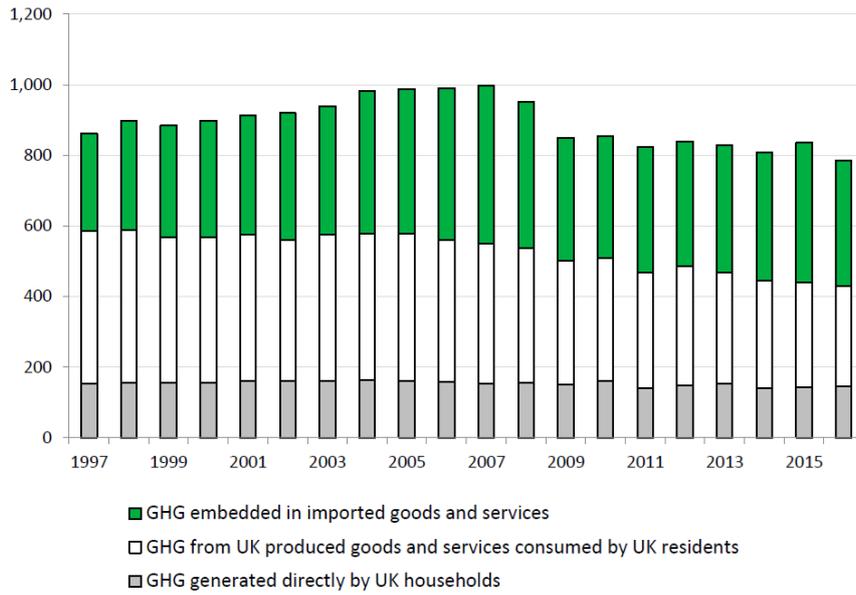
- 12. The city’s direct emissions (electricity, gas and local road transport) have been measured since 2005 and the most recent year of data is 2016. These emissions have been reduced by 37%.and this is shown in Figure 6. This is in line with other major cities of the UK and faster than the UK as a whole (33%). We anticipate that the City will achieve its current target (set with unanimous Full Council support in 2008) of a 40% reduction from 2005 by 2020.
- 13. Emissions have fallen due to increasing supply of renewably electricity locally and nationally combined with increases in energy efficiency in buildings. Unfortunately, after a few years of improvement CO2 emissions are now rising as the miles driven in the city grows faster than the fuel efficiency of vehicles.

Figure 6 Scope 1 and 2 emissions in Bristol area – Electricity, gas and local road transport



- 14. We do not have data on the Indirect or Consumption based emissions from the supply chain and source of goods and services imported into the City. The UK Government has estimated these emissions over recent years and this is shown in Figure 7. This shows that imported goods and services form a significant part of our footprint which is not declining in line with our locally produced emissions in the UK..

Figure 7 The UK’s Carbon Footprint including imported goods and services (mt CO₂e)



5. Accelerating action – The Mayor’s Climate Emergency Action Plan

15. Tackling climate change requires action by every part of society – government, businesses and citizens. Section 3 of this report shows the importance of emissions generated by consumption of goods and services. As individuals we can influence the size of our carbon footprint by how much and what we buy, and those people on higher incomes have larger footprints and are therefore able to make the greatest contribution to reducing emissions – especially where these emissions arise from activity such as holidays rather than heating their homes.
16. We also need action by the companies and organisations which supply these goods and services to reduce their carbon footprint. For example, we all rely on information technology for everyday life and this sector now accounts for a significant amount of energy consumption in the production of the equipment and the transmission and storage of data. We need those companies to invest in renewable energy to supply their services, and this is happening – for example, Google now supplies all its electricity needs from renewable energy – but much more action is needed across the whole of business.
17. The Mayor is committed to playing his part and ensuring that he delivers actions now to accelerate the city’s progress towards carbon neutrality and resilience. Some of the actions create the governance, collaboration and management arrangements to deliver more tangible action in the coming years.

5.1 *Leading by Example – a Carbon Neutral and Resilient Council*

18. The motion asked that the Mayor to *“Report to Full Council within six months with the actions the Mayor/Council will take to address this emergency”*
19. The Mayor was clear that he and Bristol City Council can, and are already, showing leadership in the city to reduce carbon emissions. The City Council’s direct emissions from energy and transport account for approximately 0.8% of the City’s direct emissions. Thanks to the work of this, and previous administrations, the Council has already reduced its direct carbon emissions by 71% since 2005, twice the rate of the city as a whole (35%).
20. **In response to the Climate Emergency declaration the Mayor is committing to a new target for the Council’s direct emissions to be carbon neutral by 2025.** A plan is already being developed to achieve this by improving the energy efficiency of our buildings, electrifying our vehicle fleet, generating more renewable energy on our own land and replacing fossil fuel “natural” gas with bio-gas, generated from food waste and sewage. (The use of biogas was suggested by the Cross Party Working Group)
21. **The Mayor will also quantify the emissions generated indirectly⁵** on behalf of the Council for example by organisations providing services and goods and by tenants who occupy our residential and commercial properties.
22. Whilst undertaking this assessment and developing the plans the **Mayor has tackled one obvious area –single use plastic. He has begun with City Hall** – for example, removing

disposable cups and replacing plastic water coolers and cups in meeting rooms with publicly accessible refill points. A waste audit of City Hall is underway to further reduce waste and improve recycling. The Mayor will now:

- Develop a BCC guidance document on how to minimise single use plastics.
- Develop an action plan to phase out single use plastics as quickly as possible across council activities, for example in parks, markets and events
- Work with partners to champion and drive forward reuse initiatives and help raise awareness to the issues around single-use plastics and disposables.
- Improve recycling facilities in council offices, in particular, City Hall and 100 Temple Street.

23. Whilst the Mayor’s commitment to Carbon Neutrality by 2025 will only reduce the city’s emissions by a small percentage it will send a clear leadership message. The Mayor has invited partners in the city to also declare climate emergencies and to set out a timetable for their own organisations to become carbon neutral and climate resilient. A growing number of these have made such commitments (see Paragraph **Error! Reference source not found.**) and collectively these organisations will make a substantial contribution to the goal of city carbon neutral climate resilient city.
24. Achieving these targets will be a challenge and the Council will need to be able to quantify its carbon emissions and **understand the impacts of all new major plans, policies and projects** on the Council’s and city’s emissions and climate resilience whilst also reviewing key existing plans. **The Mayor will therefore create a Carbon Impact “Budget” which will set out the carbon impacts of all major projects.** This budget and a report on performance against last year’s budget will be considered alongside the Council’s financial budget recognising how important this is to the Council. ***Note this is not a new allocation of funding for climate projects but a way of ensuring that the Council knows the cumulative climate consequences of its decisions and its progress towards its carbon neutrality goal. This idea was suggested by the Cross Party Working Group.***
25. The Mayor is encouraging every organisation in the City to do similar – putting in place mechanisms in their business planning processes to identify the actions that they can take now and in the next few years to deliver significant reductions in their emissions.
26. Tracking the progress of the Council and the City towards carbon neutrality is complex but necessary to ensure that we are making progress quickly enough. **The Mayor will ensure that the council accounts for its own emissions and the City’s emissions to internationally recognised standards. The Council will also assess vulnerability to climate change. This information will be published openly through the Carbon Disclosure Project.** He will encourage all major organisations in the city to do the same for their own emissions.

5.2 Involving citizens

27. In every part of the city, citizens of every age, race and gender are concerned about climate change, and the 2018 Quality of Life Survey showed that 86% of respondents were very

concerned or concerned about the impacts of climate change. They are concerned about how this will affect their families, their livelihoods, their neighbourhoods and the interconnected world that they are part of. The Mayor wants to engage citizens and help them to have the opportunity to be a part of creating a safe and secure climate for them and their families. Turning their concern and fear for the future into hope and successful action.

28. **The Mayor will deliver a climate change public engagement programme** to be able to engage and empower citizens, understanding the barriers and enabling everyone to contribute. (CPWG suggestion) The Mayor has allocated £100k of funding to this activity.
29. Some young people have very clearly shown their concern about climate change in the Youth Strikes for Climate Change and more widely, through the Youth Council who have identified it as one of their priorities. As part of the engagement programme the Mayor will work with the Youth Council to involve young people in creating the future plans for the city, providing opportunity to contribute their concerns, ideas and enthusiasm. A key challenge in this area is engaging a wider demographic of young people, from all schools and colleges across the city, particularly recognising the urgent need to listen to the voices of the lowest income families.

5.3 *Taking a One City Approach*

30. Emergencies need careful management and governance structures. For emergencies like fires or floods the UK has an established model for multi-agency action. The Mayor has used this model to lead the creation of new city structures to manage the climate emergency as part of the City Office governance arrangements.
31. The motion called on the Mayor to *“Work with partners across the city and region to deliver this new goal through all relevant strategies and plans”*. Achieving a carbon neutral and climate resilient city cannot be achieved by any one organisation – it will require transformative action by many organisations, locally and nationally. This requires a new form of Governance and therefore the Mayor’s first action on the day of the Motion was to commission the Bristol Green Capital Partnership to **create a new Environmental Sustainability Board** to bring city organisations together under the City Office. **The Mayor will chair this board and it held its first meeting on 10th July 2019**. The Environmental Sustainability Board will lead the environmental and climate change aspects of the One City Plan.
32. To manage the transition to a climate neutral and resilient city decision makers will need new knowledge and skills. **The Mayor has already invited other leaders in the city to join him in a climate change training course, and will roll this out to senior managers and key staff within the city. The Mayor is also offering this to all Councillors and has allocated £50k of funding.**

5.4 *Developing a shared One City Climate Strategy for Bristol*

33. **The Environmental Sustainability Board, working with the other boards of the City Office, will lead the creation of a One City Climate Strategy for Bristol**. This strategy will address how we rapidly reduce the city’s carbon emissions to achieve carbon neutrality but also how we improve the resilience of the city to the impacts of climate change. The Mayor has allocated £100k of funding towards this.

34. The Mayor asked the Bristol Green Capital Partnership to develop the Environmental Sustainability Board. Following an open and transparent recruitment process they have built a diverse and inclusive board which met for the first time last week. The Mayor invites all Councillors to support this Board in its work to lead the environmental and climate change work city wide, working across the city office structures.
35. However, drawing up the climate strategy will not be the sole responsibility of the Environmental Sustainability Board but rather will need all the City Office Boards to contribute. The Mayor wants to ensure that these boards have access to the best advice and the **Mayor has asked the universities of Bristol and UWE to create an Advisory Committee on Climate Change to provide this to the Boards, City Office and Council.**
36. To help inform the development of the climate strategy the Mayor has commissioned a 2 stage technical assessment of how Bristol can become a carbon neutral city. The first part assesses the current plans and scenarios locally and nationally to understand how close they will bring us to achieving carbon neutrality for our direct emissions as a city. This includes the electricity and gas we use in our buildings and the fuel that we use in vehicles within the city. The second part will consider what additional action is needed to close the gap between these existing scenarios and carbon neutrality. The first stage is complete and the second part is being commissioned and will report in the Autumn.
37. To help us understand the action that we need to take, we have produced a forward looking analysis of the likely trajectory of carbon emissions under the current policy environment. We developed two possible projections for the City of Bristol’s carbon emissions by 2030:
- The ‘Committed’ trajectory. This is a projection based on the historic emissions trajectory for the City of Bristol which assumes a continuation of existing investment in carbon mitigation policies and measures that have already been committed or budgeted to 2030. This has been aligned to a national trajectory for a ‘Steady Progression’ scenario within the framework of the National Grid Future Energy Scenario (FES) 6. This outcome would be short of what would be needed to meet the UK’s carbon reduction targets⁷.
 - The ‘Target 2050’ trajectory. This scenario assumes that Bristol delivers a broader and more ambitious set of policy and other measures to achieve the existing commitment to be a net zero carbon city by 2050. In the scenario it is assumed that Bristol continues to proactively decarbonise its energy usage, building on a range of measures and future investments such as those identified in the City Leap and the Joint Local Transport Plan. At a national level the UK would meet the commitments of the 4th and 5th carbon budgets and would be on track to meet its 2050 UK carbon targets of an 80% reduction in carbon emissions.
38. The technical study concluded that the likely emissions reduction between 2016 (the most recent year of available data) and 2030 would be between 28% and 46%.
39. The study helps to identify some of the actions which we need to accelerate and scale up. It also

⁶ <http://fes.nationalgrid.com/fes-document/>

⁷ For example, see 5th Carbon Budget Committee on Climate Change

points to the gap between existing potential trajectories and achieving carbon neutrality. This will be used to inform the development of a Climate Strategy for Bristol.

Figure 8 The “Committed” Scenario

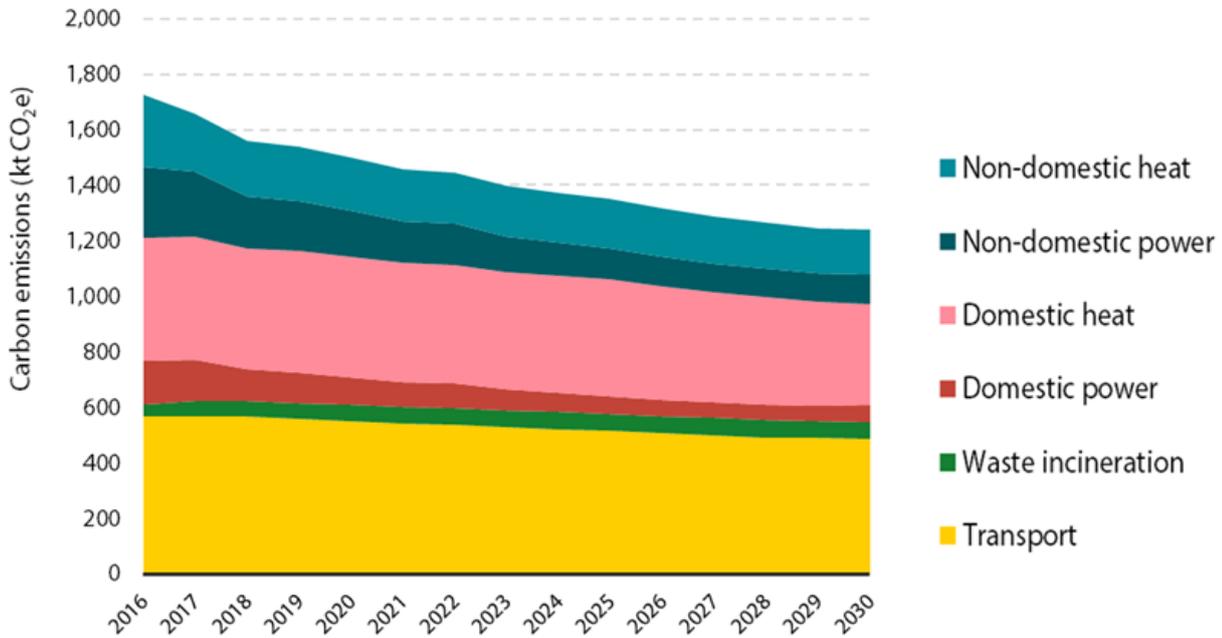
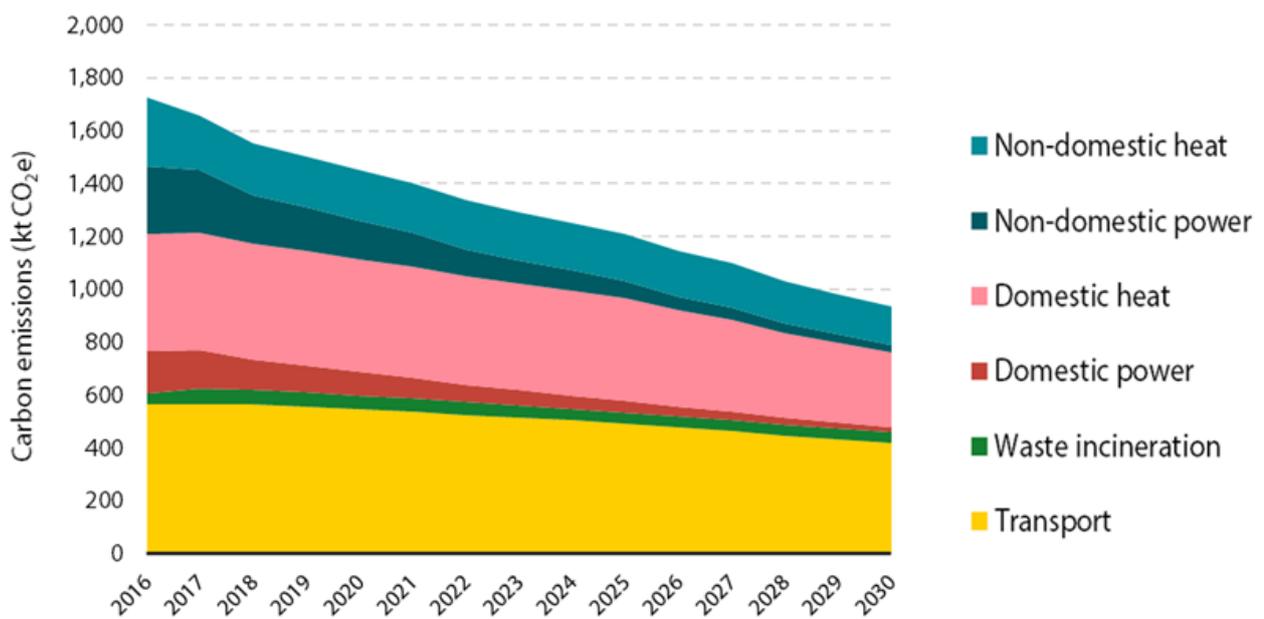


Figure 9 Target 2050 Scenario



Investment requirements

40. We have undertaken some simple analysis of level of investment needed in achieving Carbon Neutrality for direct emissions. What is clear is that substantial investment will be needed, and that much of this investment would generate good value returns and create thousands of jobs.
41. The UK Climate Change Committee’s Advisory Group’s report On Costs And Benefits Of Net Zero by 2050 reported that:

“The precise investment needs of getting to net zero by the middle of the century are unknowable, because they will depend on the cost dynamics of the different technologies involved and, as has been seen in section 4, these could change dramatically over the timescale concerned.

However, two things are clear: that very large investments will be required in low-carbon technologies and infrastructure; and that current levels of such investment are much too low.

There are estimates of the required order of magnitude of such investments. The Green Finance Task Force has totalled the Committee on Climate Change’s estimates of the necessary investments in infrastructure to meet the fifth carbon budget (spanning 2028-32) as being approximately 1% of GDP (£22 billion) per year, of which public investment would be about £2.2 billion. Much of this would be a redirection of, rather than additional, investment. It includes investments in: electricity generation (renewables, nuclear and carbon capture and storage), transmission and distribution networks, and smart grids, including storage; heat delivery (electric heat pumps, district heating networks or possibly hydrogen-fuelled boilers) to energy-efficient buildings; electric vehicles, using batteries or hydrogen fuel cells, with the associated recharging and refuelling infrastructure, and active and public transport infrastructure; and carbon capture and storage (CCS).”.

42. If we were to scale this to Bristol, which is 0.7% of the UK population, we could estimate that some £154m per year needs to be invested in or on behalf of Bristol citizens and businesses to achieve the existing UK 2032 target. The 2032 target is roughly equivalent to Figure 5 Target 2050 Scenario and is approximately halving our emissions. The Committee suggested that approximately 10% of the investment needed to be from public funds.
43. In 2015 the University of Bristol and University of Leeds undertook an analysis of the economics of creating a low carbon Bristol and achieving the city’s previous targets. This concluded that there were substantial cost-effective measures which would reduce emissions and generate financial savings. They estimated that there was £2.8Bn of good investments opportunities, which would equate to £280m per year. The UoB report assessed the jobs that would be created from this scale of investment and concluded that this would create approximately 12,000 jobs.
44. The UoB report also identified that many of these investments would pay for themselves in few years and go on to generate savings or profits. They estimated that they would cut the energy bills of Bristol households and business by 35% saving over £300m per year.
45. So we can conclude that substantial redirection of investment is needed to be able to achieve the transition to a carbon neutral city. But if we are able to do that we can create sound

financial returns and create jobs for local people.

5.5 *Taking action now*

46. The baseline scenarios in Figure 8 and Figure 9 show that achieving zero carbon emissions from direct emissions will require very significant additional action. The scale of the changes required in the higher scenario are significant and include:
- Energy efficiency retrofitting to 7,000 homes every year, which is a substantial increase from the hundreds currently being improved for energy efficiency
 - 50% of commercial and public buildings having energy efficiency measures installed in the next decade
 - 50,000 electric vehicles in the city, compared to a few hundred today
 - A 200% increase in the renewable electricity generated in the city
 - All new buildings approved after 2020 being Zero Carbon in line with the proposed Local Plan Policy.
47. Clearly this scale of action and acceleration is not within the current capability of the city council and will require significant action by national government. **The Mayor will continue to work closely with other major cities in the UK.** Within the Core Cities group of UK cities he holds the portfolio for climate change and is ensuring that the cities share knowledge, collaborate and use their combined voice **to call on Government to create the right conditions for cities, businesses and citizens to act.** Bristol will also join the Place Based Climate Action Network including Leeds, Belfast and Edinburgh to share best practice in managing climate change at a city level.
48. Within the constraints the Mayor has developed an ambitious programme to help make Bristol a Carbon Neutral and Resilient City.
49. **The Mayor and Councillor Kye Dudd, Cabinet Member for Transport and Energy, have already initiated the largest council led energy investment programme in the UK – the City Leap Energy Partnership.** This will procure Strategic Partner(s) to help the City Council accelerate Bristol’s transition to a decentralised low carbon energy system whilst delivering social, environmental and economic benefits for the people of Bristol.
50. This pioneering partnership is expected to bring £800m to £1000m of investment into low carbon energy projects such as district heating, renewable energy, smart energy, electric vehicles and energy efficiency refurbishments into the city, rapidly accelerating the city’s progress. This partnership will be a central part of BCC’s action to deliver a future climate strategy for Bristol but much more will also need to be achieved in other areas of the council and the city economy.

5.5.1 Creating low carbon jobs and businesses

51. The transition to a carbon neutral economy will be a big challenge for our businesses but an even bigger opportunity. The UK Committee on Climate Change has set out the opportunities that this creates for the UK economy as a whole and notes that the low carbon sector is growing much more quickly than the wider economy. This is especially true in Bristol which has a large low carbon sector. Independent analysis by the University of Bristol in 2015 identified that reducing our emissions by 40% would generate 12,000 jobs in the city.
52. As part of the development of the Climate Strategy for Bristol we will assess in more detail the job creation potential of achieving carbon neutrality and resilience and how we ensure that everyone in the city can benefit from these opportunities, ensuring that we have a just transition.
53. **The Mayor will:**
 - **Continue with the City Leap Project** to attract £1bn of investment in the City’s energy system and contribute to creating new jobs in the city, insulating homes, installing new renewable energy and much more.
 - **Work with Business West and the Economy Board** to help businesses to develop in low carbon business models and to secure investment to enable them to reduce their own carbon footprints and build climate resilience.
 - **Work with the West of England Combined Authority** and neighbouring councils to align the existing funding we have for employment training and skills to ensure that we enable everyone to benefit from the opportunities this creates.
 - **Work with Bristol Energy Co-operative and others** as part of the City Leap Partnership to investigate options to enable more local people to invest in carbon neutrality solutions through mechanisms such as Green Bonds. (CPWG suggestions)
 - **Ask Government to create a Create a Sustainable Energy Investment Fund** which cities and local authorities can use to stimulate investment by the private sector and communities, ensuring that good projects can be delivered more quickly.
 - **Ask Government to rapidly review the impacts** which achieving net-zero will have across society and put in place effective measures to ensure that we have a fair transition to a net-zero country

5.5.2 Efficient and affordable homes

54. Bristolians spend nearly £300,000,000 on energy for their homes. Not only does this result in millions of pounds leaving our economy, and leave many households in fuel poverty, it also leads to about 40% of the direct carbon emissions of the city.
55. Over the past decade there has been a large reduction in the emissions from the use of electricity – partly because of improved efficiency but mainly because of renewable sources of

energy, such as wind and solar, replacing coal and gas in the energy system. There has also been a 25% reduction in gas use due to improved energy efficiency of homes.

56. We need to accelerate the improvement in energy efficiency and generate heat from low and zero carbon sources. Therefore the **Mayor will:**
- **Continue with home energy efficiency projects** in council owned homes and private homes, this includes: Warm Up Bristol and REPLICATE Projects providing subsidised energy efficiency refurbishment to homes, the Wessex Loan fund providing low or zero interest rate loans for energy efficiency, and grants for private sector landlords.
 - **Scale up the home energy efficiency programme** through the City Leap Energy Partnership delivering energy efficiency measures to inefficient homes, particular those of people living in fuel poverty. (Cllr XPWG suggestion 48 and 49).
 - **Call on Government to put this in place a comprehensive national building refurbishment programme** for homes; eliminating fuel poverty, improving comfort and reducing costs.
57. In addition we need to see much more renewable energy used in homes and most of this will be achieved by solar panels. Thousands of solar panels have been installed on homes in Bristol, our assessment is that there could be many more. Unfortunately the Government has changed the finance system for solar panels and this has severely reduced the rate of installations nationally. The Mayor will:
- **Continue with the REPLICATE project** which is testing smart energy systems in homes to maximise the opportunity and value of solar panels.
 - **Run a small trial in BCC social housing this year with Bristol Energy** to better understand the financial business case for solar panels following the Government cuts to the feed-in-tariff which paid for solar electricity generation.
 - **Aim to install solar panels on 10,000 council owned homes** through the City Leap Energy Partnership. (CPWG suggestion).
 - **Call on the Government to put in place an effective financial regime** to enable the UK to fully exploit the solar resource we have in cities, utilising the “unused” roof space.
58. Bristol is a rapidly growing city and we expect that 20,000 new homes will be built in the city by 2030. Some of these already have planning permission and thanks to our existing planning policies the homes have lower carbon footprints than national standards require. But we need to ensure that new homes are a close to Zero-Carbon as soon as possible and therefore the Council has already proposed that all new development (including homes) are zero carbon and has recently concluded a consultation on this policy as part of the Local Plan review.

59. The Mayor will:

- **Ensure that all new homes built by the City Council directly or through grant funding** of registered providers of affordable homes meet current planning policy to reduce carbon emissions by 20% through the provision of on-site renewable energy generation and meet the more ambitious future planning policy (see below). (CPWG suggestion)
- **Demonstrate innovative technology in new developments** such as heat pumps which extract heat from the boreholes in the Alderman Moores site enabling the homes to have low carbon, affordable heating. (CPWG suggestion)
- **Provide additional grants of up to £10,000 per home for non-profit making housing** organisations to provide sustainable energy systems for their homes.
- **Carefully consider the responses to the Local Plan** and to propose Local Plan policies which take us towards zero carbon development as quickly as possible. (CPWG suggestion)
- **Call on the Government to set net-zero standards for all New Development** in the UK from 2025. (CPWG suggestion)

60. As well as the energy used by homes when occupied, we need to consider the materials that they are made of (as part of our indirect emissions) and whether they are able to adapt to a changing climate. The proposed Local Plan policy CCS3, on adaptation to a changing climate promotes green/blue infrastructure, green or living roofs and other measures to prevent overheating, flooding and conservation of water supplies. **The Mayor will ensure that the consultation responses are carefully considered and that the emerging local plan adequately addresses these issues.** (CPWG suggestion)

5.5.3 Clean and Sustainable Travel

- 61.** Vehicles on the roads of Bristol drive 1.5 billion miles per year and generate 30% of the city’s direct emissions of CO₂ as well as the majority of the gases and particles which cause local air pollution. Unfortunately after a few years of improvement CO₂ emissions are now rising as the miles driven in the city grows faster than the fuel efficiency of vehicles. Transport infrastructure is also vulnerable to disruption and damage from extreme weather events, whilst also presenting opportunities for building localised and city-level adaptation through blue-green infrastructure.
- 62.** To achieve carbon neutrality and improve air quality we need to reduce the miles driven by private cars, lorries and vans in the city by enabling more people to travel more often by walking, cycling and public transport. Where powered transport is needed we need to rapidly switch these to electric or other power generated from renewable sources, ensuring that there is sufficient infrastructure to provide the power.
- 63.** **The Mayor has developed the Bristol Transport Strategy.** Through the public consultation process there was substantial support the strategies goals and it was adopted at Cabinet in July 2019. This Strategy addresses many of the suggestions made by the Cross Party Working Group.
- 64.** In addition, in June 2019 the Mayor brought forward proposals to improve air quality in the city

and these are being consulted upon at present.

65. In addition, the Mayor will continue to progress towards a bus deal, with improved bus prioritisation and park and rides, and a mass transit system.

5.5.4 Generating clean, renewable energy in the city

66. The UK’s plans to reduce carbon emissions have relied heavily on ensuring that we generate our electricity and heat from low or zero carbon sources instead of the coal and gas currently used. Good progress is being made nationally and Bristol is able to benefit from this by ensuring that we maximise our renewable energy resources. The City Council, Bristol Port and Wessex Water have all developed wind turbines at Avonmouth and these are contributing to the city’s needs. Combined with Solar and biogas the city generates about 7% of its electricity needs.
67. Initial studies suggest that this local renewable electricity could be doubled or trebled. Clearly, however, Bristol will need to rely on surrounding areas and the wider UK energy supply system to generate its clean, renewable electricity.
68. Whilst we want buildings to be as energy efficient as possible we will still need to provide low and zero carbon heat for homes and businesses. In central areas of the city the Council is already operating and developing district heating networks where heat is supplied to buildings from central generating systems – akin to a central heating system for the city. The council is providing heat from gas and biomass and is developing a project to take heat from the water in the harbour. There is a potential to link district heating to industrial plants and waste incinerators in Avonmouth.
69. The Mayor will:
- **Continue developing the City Leap Energy Partnership** to develop district heating and to exploit the renewable energy sources in the city, ensuring that we get local benefit from these resources.
 - **Continue exploring a wide range of technologies**, for example the Council is currently undertaking a feasibility study of heat from the earth, extracted from old mine workings in the Bedminster and Easton areas of the city. (XPWG 26 and 31)
 - **Work with local community energy co-operatives** and similar groups to enable local people to invest in renewable energy in the city and beyond.
 - **Call on Government to create a Sustainable Energy Investment Fund** which cities and local authorities can use to stimulate investment by the private sector and communities, ensuring that good projects can be delivered more quickly.
 - **Call on Government to urgently provide long term certainty about incentives for low and zero carbon projects**, many of which are currently due to end in 18 months’ time. Currently this uncertainty is leading to the cancelling and weakening of good projects.
 - **Call on Government to change the tax system to favour low and zero carbon solutions**, and avoiding perverse disincentives such as the increase in business rates if you install solar panels.

5.5.5 Reducing the carbon footprint of our consumption

70. The information in **Table 1** shows that the indirect emissions from materials we consume as a city are greater than the direct emissions. Our influence over these emissions is also indirect.
71. The Mayor and council are helping the city to reduce the impact of the city, for example by:
- Improving recycling and collecting waste materials which reduces the mining, processing and transporting of new materials – for example, making recycled Aluminium produces less than 10% of the carbon emissions produced when making aluminium from new materials.⁸
 - Building a new household waste and recycling centre in South Bristol.
 - Working with partners to create a more sustainable food system in the city through the Going for Gold project, encouraging local production and reducing food waste.
72. As part of developing the Climate Strategy for Bristol we will explore the consumption emissions of the city in more detail and develop specific actions to address them.

5.6 Taking action through all Council services and companies

73. Increasingly the City Council is using council owned companies to achieve its objectives, currently Bristol Waste, Bristol Energy, Bristol is Open and Goram Homes. They are already helping to reduce carbon emissions, for example, Bristol Energy already supplies 75% of its electricity from renewable sources, and nearly half of this is generated locally. With the adoption of carbon neutrality by 2030 as a goal of the city council, the **Mayor has asked that all the companies consider how they can contribute to this goal as they update their business plans and ensure that Climate resilience is built into their forward plans.**

5.7 Inter City collaboration and innovation

74. The motion called upon the Mayor to *Work with other governments (both within the UK and internationally) to determine and implement best practice methods to limit Global Warming to less than 1.5°C;*
75. Already the West of England has reduced emissions faster than the national average and the strategic approach enabled by the combined authority gives us an opportunity to boost the regional economy by accelerating our progress towards carbon neutrality. **The Mayor will work closely with the West of England Combined Authority and our neighbouring local authorities to ensure that the Joint Spatial Plan, Joint Transport Plan and investment in skills fully contribute to decarbonising the region and building resilience.** (XPWG Suggestion 80)
76. Through the Carbon Disclosure Project and the international network for sustainability, ICLEI, **the Mayor will ensure that we learn from the good practice in other countries** and share our

⁸ https://www.carbontrust.com/media/38366/ctc790-international-carbon-flows_-aluminium.pdf

experience and successes as we did when we were European Green Capital in 2015. (XPWG Suggestion 81)

- 77.** As well as learning from others, Bristol is blessed with many innovative people and businesses as well as the universities, colleges and schools. **The Mayor will encourage a culture of innovation and new ideas, applying these in the city council where possible.**