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CLIMATE EMERGENCY ADVISORY COMMITTEE

Meeting to be held REMOTELY on
Wednesday, 10th March, 2021
at 2.00 pm

MEMBERSHIP

Councillors

B Anderson
J Bentley
N Buckley
P Carlill
A Forsaith
A Garthwaite
J Illingworth
M Midgley
L Mulherin
M Shahzad
P Wadsworth
N Walshaw (Chair)
P Wray

Note to observers of the meeting:

To remotely observe this meeting, please click on the 'View the Meeting Recording' link, which will feature on the meeting's webpage (linked below) ahead of the meeting. The webcast will become available at the commencement of the meeting.

https://democracy.leeds.gov.uk/ieListDocuments.aspx?CId=1133&MId=10197&Ver=4

Agenda compiled by:
Harriet Speight
Governance and Scrutiny Support
Telephone: 0113 37 89954

A G E N D A

Item No	Ward	Item Not Open		Page No
1			**APPEALS AGAINST REFUSAL OF INSPECTION OF DOCUMENTS** To consider any appeals in accordance with Procedure Rule 15.2 of the Access to Information Procedure Rules (in the event of an appeal the press and public will be excluded). (*In accordance with Procedure Rule 15.2, written notice of an appeal must be received by the Head of Governance Services at least 24 hours before the meeting)	
2			**EXEMPT INFORMATION - POSSIBLE EXCLUSION OF THE PRESS AND PUBLIC** 1) To highlight reports or appendices which officers have identified as containing exempt information, and where officers consider that the public interest in maintaining the exemption outweighs the public interest in disclosing the information, for the reasons outlined in the report. 2) To consider whether or not to accept the officers recommendation in respect of the above information. 3) If so, to formally pass the following resolution:- **RESOLVED –** That the press and public be excluded from the meeting during consideration of the following parts of the agenda designated as containing exempt information on the grounds that it is likely, in view of the nature of the business to be transacted or the nature of the proceedings, that if members of the press and public were present there would be disclosure to them of exempt information, as follows:-	

Item No	Ward	Item Not Open		Page No
3			**LATE ITEMS** To identify items which have been admitted to the agenda by the Chair for consideration (The special circumstances shall be specified in the minutes)	
4			**DECLARATION OF DISCLOSABLE PECUNIARY AND OTHER INTERESTS** To disclose or draw attention to any disclosable pecuniary interests for the purposes of Section 31 of the Localism Act 2000 and paragraphs 13-18 of the Members' Code of Conduct. Also to declare any other significant interests which the Member wishes to declare in the public interest, in accordance with paragraphs 19-20 of the Members' Code of Conduct.	
5			**APOLOGIES FOR ABSENCE** To receive any apologies for absence from the meeting.	
6			**MINUTES OF THE PREVIOUS MEETING** To receive and approve the minutes of the meeting held on 18th January 2021.	7 - 12
7			**OPEN FORUM** At the discretion of the Chair, a period of up to 15 minutes may be allocated at each ordinary meeting for members of the public to make representations or to ask questions on matters within the terms of reference of the Committee. No member of the public shall speak for more than five minutes in the Open Forum, except by permission of the Chair. Please note: Members of the public are asked to submit a video of their question or statement to climate.emergency@leeds.gov.uk by 4 p.m. on Wednesday 12th March 2021.	

Item No	Ward	Item Not Open		Page No
8			**WORKING GROUPS UPDATE** To receive a verbal update on the progress of the Committees' working groups to date.	
9			**LEEDS CLIMATE COMMISSION: ZERO CARBON ROADMAP** To consider the report of the Chief Officer (Sustainable Energy and Air Quality) that introduces a presentation from the Leeds Climate Commission on the recently published Net-Zero Carbon Roadmap for Leeds, which has been developed in response to the recommendations of the Leeds Climate Change Citizens' Jury.	13 - 42
10			**ANNUAL REPORT TO EXECUTIVE BOARD ON THE CLIMATE EMERGENCY** To consider the report of the Chief Officer (Sustainable Energy and Air Quality) that introduces the annual Climate Emergency report considered at the Executive Board meeting held 10th February 2021, which provides an update on the progress being made towards reducing emissions at both a national and local level, setting out key actions that have been undertaken. The report also reflects upon the impact of the Covid-19 pandemic on both emissions and how the road to recovery can be founded in the green economy.	43 - 80
11			**DATE AND TIME OF NEXT MEETING** To be confirmed.	

Climate Emergency Advisory Committee

Monday, 18th January, 2021

PRESENT: Councillor N Walshaw in the Chair

Councillors B Anderson, J Bentley, N Buckley, P Carlill, A Forsaith, A Garthwaite, J Illingworth, M Midgley, L Mulherin, M Shahzad, P Wadsworth and P Wray

42 Appeals Against Refusal of Inspection of Documents

There were no appeals.

43 Exempt Information - Possible Exclusion of the Press and Public

There were no exempt items.

44 Late Items

There were no late items.

45 Declaration of Disclosable Pecuniary and Other Interests

There were no declarations of disclosable pecuniary interests.

46 Apologies for Absence

There were no apologies for absence.

47 Minutes of the Previous Meetings

RESOLVED – That the minutes of the meetings held 22nd October and 15th December 2020 be approved as accurate records.

48 Open Forum

Members of the public were asked to submit a video recording of their open forum submission in advance of the meeting.

Three videos were submitted by the following children and young people in Leeds, highlighting action taken to address the climate emergency in school and beyond:

1) Robbie Strathdee
2) Woody Kadis Ross

3) Ava Garside

All three videos can be viewed here.

49 Working Groups Update

The Chief Officer for Sustainable Energy and Air Quality, Polly Cook, provided an update to Members on the progress of the working groups to the Committee as follows:

- **Transport –** at the most recent meeting, the working group reviewed the Transport Strategy approved at Executive Board in December 2020.

- **Biodiversity and Food –** at the most recent meeting, the working group received updates in relation to a number of biodiversity projects taking place across the city, along with a presentation on the White Rose Forest Strategy approved at Executive Board in December 2020. Professor Lindsay Stringer from the University of York is scheduled to attend the next meeting to present soil management strategies, as requested by Members. At future meetings, the working group intend to invite representatives of the vertical farming community to explain the process in more detail, as well as focus on developing a food action plan for Leeds.

- **Planning, Buildings and Energy –** at the next meeting, the working group will receive progress updates on key projects across the city, including the Public Sector Decarbonisation Scheme, domestic grants and European funding.

Members requested that the work programme for the Biodiversity and Food Working Group be updated to include focus on complementary planting arrangements for biodiversity and utilising local food production.

50 Children and Young People Climate Emergency Priorities

The Director of Children and Families submitted a report that advised Members of the ongoing work streams to engage with children and young people in Leeds in regards to the Climate Emergency, and presented a number of films/presentations created by school pupils highlighting their environmental priorities.

The following were in attendance:

- Steve Ruse, Lead Sustainable Schools Consultant, Children and Families, Leeds City Council
- Mr Andrew Nelson, Teacher at Richmond Hill Primary Academy
- Mary Mengstaeb, Year 5 pupil at Richmond Hill Primary Academy

The Lead Sustainable Schools Consultant introduced the report, highlighting activity to promote the climate emergency and engage with schools following the Leeds Youth Voice Summit on Climate for secondary schools in February 2020.

Mr Nelson and Mary Mengstaeb were welcomed by Members and invited to introduce the video submitted by Richmond Hill Primary Academy. Mr Nelson advised the Committee that Richmond Hill Primary Academy has undertaken a number of community based projects over the last 18 months in response to the GORSE Academies Trust commitment to becoming carbon neutral by 2025, as presented in the video submitted and played at the meeting.

Members noted their thanks to the representatives from Richmond Hill Primary Academy for attending the meeting, and for their continued inspirational dedication to the climate emergency. Members were pleased to hear of their partnership with other Leeds based organisations such as Opera North, and projects to discourage idling vehicles around schools.

Two further schools, Strawberry Fields Primary School and Kirkstall St Stephen's Church of England Primary School, submitted videos that were played at the meeting. Unfortunately, representatives from the schools were unable to attend and so the videos were introduced by the Lead Sustainable Schools Consultant, who provided a brief overview of each video. Members thanked the schools for their contributions and highlighting the issues raised in the videos, noting particularly the impact of 'fast fashion' and the value of schemes to promote recycling and reusing school uniform, as well as introducing vegetarian and vegan meals to the school lunch menu and further ideas to reduce food waste and increase sustainability.

The Chief Officer (Sustainable Energy and Air Quality) presented the soon to be launched Climate emergency Toolkit for Young People in Leeds, to highlight examples of the resources and opportunities available to young people and schools across the city, as requested by attendees of the Youth Summit held in February 2020. Mr Nelson welcomed the launch of new resources for schools and suggested that further 'assembly ready' packages could be developed, such as a video designed for a whole school audience to encourage climate action, incorporating all of the ideas and resources included in the toolkit and examples of successful projects in other Leeds schools. Related to this, the Lead Sustainable Schools Consultant referred Members to the Climate Action Route Map (Appendix 2) for senior leaders in schools to develop their own programme of activities and integrate sustainability into the curriculum.

Members suggested that further opportunities to develop the offer and engage with schools could be achieved by working with the Children and Families Scrutiny Board, and Council teams working in partnership with the Leeds Climate Commission. Members also recognised the importance of the role of the Committee in regards to demonstrating the changes that have been made as a result of the submissions from schools, to maintain and further encourage the enthusiasm amongst young people to take ownership and tackle the climate emergency.

RESOLVED –

a) That the contents of the three video films submitted by schools in Leeds be noted;

b) That Members comments and suggestions, in regards to appropriate action with particular emphasis on developments that simultaneously address both the climate emergency and child poverty agendas, be noted;
c) That the Committees' commendation of the important work taking place in the three schools be noted, and acknowledged in the form of a certificate for each participating school;
d) That the further 'assembly style' resources, in addition to the resources presented at the meeting, be developed and made available on the Leeds by Example website to support other Leeds schools to follow the lead of the submitting schools in identifying their own environmental priorities;
e) That the Committee will engage with Child Friendly Leeds Ambassadors at the next available opportunity.

51 Climate Emergency Toolkit for Young People in Leeds

The Chief Officer (Sustainable Energy and Air Quality) submitted a report that introduced a presentation of the new resource for children and young people in Leeds to access support and guidance on activity to support the climate emergency ambitions.

The Chair noted that the toolkit was presented at the previous item (Minute 50 refers).

RESOLVED – That the contents of the report and presentation be noted.

52 West Yorkshire Pension Fund - Investment in the Fossil Fuel Industry

The Head of Democratic Services submitted a report that introduced a presentation to be delivered at the meeting, which sets out the policy position in regards to the West Yorkshire Pension Fund (WYPF) and current investment in the fossil fuel industry.

Councillor Andrew Scopes delivered a PowerPoint presentation, setting out the background and legal requirements of the WYPF, the financial case for divestment in fossil fuels, and finally, a proposal for Members to support the following position statement:

'Following the declaration of a Climate Emergency, the Leeds City Council recognises the moral and financial risk of investing in fossil fuel companies and calls for the West Yorkshire Pension Fund to disinvest from fossil fuels in a planned way over a relatively short-period of time (not more than 3 years) and to invest this money in alternatives (such as green energy) that are expected to deliver sustainable returns over the long-term.'

Members welcomed the detailed presentation and made a number of comments, including:

- Members considered routes to engaging with other neighbouring local authorities on this matter and concluded that the Green Economy Panel at the West Yorkshire Combined Authority would be the most appropriate forum for

further discussion to take place. The Chair advised that he would correspond directly with the Chair of the Panel to identify a suitable date.

- Members suggested that the reference to ‘moral’ in the position statement be removed and replaced with ‘environmental’, to reflect the climate emergency.

RESOLVED –

a) That the Committee’s support for the position statement as set out above be noted;
b) That the matter be referred to the Executive Members to adopt as formal council position;
c) That the Chair write to the Chair of the Green Economy Panel at the West Yorkshire Combined Authority to request that this matter be discussed at a future meeting.

53 Date and Time of Next Meeting

The next meeting will take place on Wednesday 10th March 2021 at 2.00 p.m.

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Report author: Harriet Speight
Tel: 0113 37 89954

Report of the Chief Officer (Sustainable Energy and Air Quality)

Report to Climate Emergency Advisory Committee

Date: 10 March 2021

Subject: Leeds Climate Commission: Net-Zero Carbon Roadmap

Are specific electoral wards affected? If yes, name(s) of ward(s):	☐ Yes ☒ No
Has consultation been carried out?	☐ Yes ☒ No
Are there implications for equality and diversity and cohesion and integration?	☐ Yes ☒ No
Will the decision be open for call-in?	☐ Yes ☒ No
Does the report contain confidential or exempt information? If relevant, access to information procedure rule number: Appendix number:	☐ Yes ☒ No

1. Purpose of this report

1.1 The purpose of this report is to introduce a presentation from the Leeds Climate Commission on the recently published Net-Zero Carbon Roadmap for Leeds, which has been developed in response to the recommendations of the Leeds Climate Change Citizens' Jury.

2. Main issues

2.1 The Chair of the Leeds Climate Commission, Andy Gouldson will be in attendance to present the Net-Zero Carbon Roadmap for Leeds (Appendix A) and answer questions from Members.

3. Recommendations

3.1 The Climate Emergency Advisory Committee is asked to note the contents of the report and presentation.

4. Background documents[1]

4.1 None.

[1] The background documents listed in this section are available to download from the council's website, unless they contain confidential or exempt information. The list of background documents does not include published works.

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A NET-ZERO CARBON ROADMAP FOR LEEDS

Andy Gouldson, Andrew Sudmant, Amelia Duncan & Robert Fraser Williamson

UKRI Economic and Social Research Council
PCAN PLACE-BASED CLIMATE ACTION NETWORK
UNIVERSITY OF LEEDS
wrc

Please reference as:

Gouldson, A., Sudmant, A., Duncan, A. and Williamson, R. (2020)

A Net-Zero Carbon Roadmap for Leeds, Leeds Climate Commission/ Place-Based Climate Action Network.

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PREFACE

Background

The first version of the Leeds Net-Zero Carbon Roadmap was published by the Leeds Climate Commission in the spring of 2019. A lot has happened and so much has changed in the short period of time since the first version of the roadmap was published that a new version is clearly needed.

Policy Change

At the national level, in June 2019 UK Parliament passed legislation requiring the government to reduce the UK's net emissions of greenhouse gases by 100%, relative to 1990 levels, by 2050. At the local level, 2019 also saw a wave of local climate emergency declarations with places setting their own, usually more ambitious targets to reach net-zero emissions. By February 2020, 68% of UK district, county, unitary and metropolitan councils had declared a climate emergency, along with eight combined authorities/city regions*.

Within Leeds, Leeds City Council declared a climate emergency in March 2019, and it resolved to work to make Leeds carbon neutral by 2030 whilst also calling on central government to provide the funding and powers to make this possible. This declaration was followed by the "Big Leeds Climate Conversation", with extensive engagement at multiple events, and nearly 8,000 responses to a survey on what the public thought should be done about climate change.

Leeds City Council also set up its Climate Emergency Advisory Committee, and ran a State of the City event in early 2020 to review progress and guide next steps. This led to some significant policy changes with major investments in better transport and district heating already underway. Undoubtedly though many challenges remain and much still needs to be done.

The Leeds Climate Change Citizens' Jury

Later in 2019, the Leeds Climate Change Citizens' Jury brought together a representative sample of the public drawn from different groups and areas across the city to consider what Leeds should do about the climate emergency.

The jury process, which ran for a total of 30 hours,resulted in the jurors producing a set of 12 recommendations for the city, covering transport, housing, recycling, education and communication, policy instruments and finance.

This updated version of the Leeds Carbon Roadmap considers the impact that implementing all the jurors' recommendations would have on Leeds' (Scope 1 and 2) carbon footprint**. On top of the measures already identified, which the roadmap shows could close the gap between "business-as-usual" and net-zero emissions by 60% by 2030, implementing the Citizens' Jury recommendations would close the gap by a further 10% (or by 70% in total). That brings us a lot closer to our net-zero target, but it still leaves us to roll out some further more innovative options.

Green Recovery

Clearly the world has changed in 2020 with the coronavirus pandemic. From a climate perspective, the first, and we hope main phase of national lockdown in the spring and early summer did reduce our carbon footprint for a short period – and it triggered some changes in our behaviour that could help us in the longer term – but we clearly need a more positive way of addressing the climate challenge in the context of a healthy, inclusive and vibrant city.

This roadmap shows how, in the years to come, Leeds can radically reduce its carbon footprint whilst also becoming a better place, with cleaner air, improved public health, reduced poverty and inequality, increased employment and enhanced prosperity. The opportunities to stimulate the development of the city through climate action clearly highlight the need for a green recovery plan with investment in the decarbonisation of our homes, our businesses and our transport systems at its heart.

Andy Gouldson, Chair, and
Cllr Lisa Mulherin, Vice-Chair,
Leeds Climate Commission

Leeds Climate Commission

The Leeds Climate Commission was established in 2017 to support Leeds to make positive choices on issues relating to energy, carbon, weather and climate. Members of the Commission are drawn from key organisations and groups across the city from the public, private and civic sectors.

Informed by the work of the UK Committee on Climate Change, the Leeds Climate Commission is an independent voice in the city, providing authoritative advice on steps towards a low-carbon, climate resilient future to inform policies and shape the actions of local stakeholders and decision makers. It monitors progress towards meeting the city's carbon reduction targets, recommends actions to keep the city on track and advises on the assessment of the climate-related risks and adaptation opportunities in the city and on progress towards climate resilience.

The Commission aims to foster collaboration on projects that result in measurable contributions towards meeting the city's climate reduction targets and the delivery of enhanced climate resilience, It promotes best practice in public engagement on climate change in order to support robust decision-making and acts as a forum where organisations can exchange ideas, research findings, information and best practice.

https://leedsclimate.org.uk

*Source: https://www.climateemergency.uk/
**The impacts of the Citizens' Jury recommendations relating to Leeds' wider (Scope 3) carbon footprint will be addressed in future analysis.

LEEDS CARBON ROADMAP
PATHWAY TO NET-ZERO*

PCAN | LEEDS CLIMATE COMMISSION

BACKGROUND

1.5ºC

The level of global temperature rise at which we risk triggering dangerous climate change

2030

The point at which - at current rates - the world will have locked into more than 1.5ºC of warming

GLOBAL TO LOCAL

31m

tonnes

Leeds' share of the global carbon budget (to keep to 1.5ºC of warming)

Leeds is emitting

4m

tonnes

of carbon a year. At this rate, we will have used up our budget by

2029

BASELINES AND TARGETS

40%

The decline in Leeds' carbon emissions since 2000

This needs to be increased to

70% by 2025
85% by 2030
100% by 2050

Leeds has committed to work towards being

CARBON NEUTRAL

by

2030

That leaves a **big gap** but we can close it by the following options

COST-EFFECTIVE OPTIONS

Cost-effective options such as

better housing and transport

could close the 2030 gap by

41%

These would reduce Leeds' energy bill by

£651m

per year, and would create nearly

15,000

years of extra employment

MORE AMBITIOUS OPTIONS

More ambitious but expensive options could

close the 2030 gap by

60%

These would have **benefits for** health, equality, travel and the environment

Doing all the Leeds Climate Change Citizens' Jury's recommendations would

close the 2030 gap by another

10%

REACHING OUR TARGET

Leeds can close the gap by

100% by 2030

through a range of

INNOVATIVE INTERVENTIONS

These include **decarbonising heating and planting trees - changing some behaviours and consumption habits would take us further still**

Net Zero by 2030

*Net-zero, like "carbon neutral", refers to achieving an overall balance between emissions produced and emissions taken out of the atmosphere, with any residual emissions removed through carbon sinks.

EXECUTIVE SUMMARY

Background

- Scientific evidence calls for rapid reductions in global carbon[1] emissions if we are to limit average levels of warming to 1.5ºC and so avoid the risks associated with dangerous or runaway climate change.
- Globally, the Intergovernmental Panel on Climate Change (IPCC) suggests that we will have used up the global carbon budget that gives us a good chance of limiting warming to 1.5ºC within a decade. This science underpins calls for the declaration of a climate emergency.
- Dividing the global carbon budget up by population gives Leeds a total carbon budget of just 31 million tonnes from 2020. Based only on the fuel and electricity directly used within its boundaries (i.e. its Scope 1 and 2 emissions), Leeds currently emits c.4 million tonnes of carbon a year, and as such it would use up its carbon budget by 2029.
- This revised roadmap takes into account the recommendations of the Leeds Citizens' Jury on climate change by accelerating and intensifying the levels and rates of decarbonisation to be pursued, especially in areas such as housing and transport within the city.
- It is important to note that this assessment does not assess all elements of Leeds' broader carbon footprint – for example, those relating to longer distance travel or the goods and services that are produced elsewhere but consumed within the city (i.e. its consumption-based/Scope 3 emissions). These broader emissions add significantly to the carbon footprint of Leeds[2,3].

Baselines and Targets

- Scope 1 and 2 carbon emissions from Leeds have fallen by 40% since the turn of the Millennium. With on-going decarbonisation of grid electricity, and taking into account population and economic growth within the city region, we project that Leeds' 2000 level of annual emissions will have fallen by a total of 45% in 2030 and 49% in 2050.
- If it is to stay within its carbon budget, Leeds needs to add to the emissions reductions already achieved to secure 70% reductions on its 2000 level of emissions by 2025, 85% by 2030, 95% by 2035, 97% by 2040, 99% by 2045 and 100% by 2050.

[1]For simplicity, we use the term "carbon" as shorthand for all greenhouse gases. All figures in this report relate to the carbon dioxide equivalent (CO2e) of all greenhouse gases. Note that our assessment therefore differs from other assessments that focus only on CO_2. One exception to this rule is in our presentation of the IPCC 1.5 degree climate budget which is based in CO_2.

[2]For example, in its position paper on aviation, Leeds Climate Commission estimated that emissions from the flights taken by Leeds residents are currently equivalent to c.30% of the direct (Scope 1 and 2) carbon footprint of the city.

[3]Although these broader consumption-based/Scope 3 emissions are not fully considered in this report, they are a focus for on-going work and will be addressed in a forthcoming extension to this report.

- Without further activity to address its carbon emissions, we project that Leeds' annual emissions will exceed its carbon budget by 4 million tonnes in 2030, and 3.5 million tonnes in 2050.
- Emissions have obviously been influenced by the Covid-19 pandemic. Analysis suggests that Leeds' Scope 1 and 2 emissions were up to 43% lower than normal during the lockdown period from March to June 2020. Based only on this lockdown period, Leeds' annual emissions for 2020 as a whole would be 13% lower than expected. In the longer term, this reduction would only delay the point at which Leeds exceeds its overall carbon budget by 2 months.

Cost-Effective Options

- To meet these carbon emissions reduction targets, Leeds will need to adopt low carbon options that close the gap between its projected emissions in future and net-zero emissions. This can be partially realised through cost-effective options that would more than pay for themselves through the energy cost reductions they would generate whilst generating wide social and environmental benefits in the area.
- More specifically, the analysis shows that Leeds could close the gap between its projected emissions in 2030 and net-zero emissions by 41% purely through the adoption of cost-effective options in houses, public and commercial buildings, transport and industry.
- Adopting these options would reduce Leeds' total projected energy bill in 2030 by £651m whilst also creating 14,623 years of employment in the city. They could also help to generate wider benefits, including helping to tackle fuel poverty, reducing congestion and productivity losses, improving air quality, and enhancements to public health.
- The most carbon-effective options for the city to deliver these carbon cuts include improved deep retrofitting of heating, lighting and insulation in houses, cooling and insulation in offices, shops and restaurants, and a range of measures across the transport sector including modal shift to non-motorised transport and the wider up-take of electric vehicles.

More Ambitious Options

- The analysis also shows that Leeds could close the projected gap to net-zero emissions in 2030 by 60% through the adoption of options that are already available, but that some of these options would not pay for themselves directly through the energy savings that they would generate. Many of these options would, however, create wider indirect benefits both economically and socially in the city.
- This means that although it can achieve significant reductions in emissions by focusing on established cost-effective and technically viable measures, Leeds still has to identify other more innovative interventions that could deliver the last 40% of shortfall between projected emissions in 2030 and a net-zero target.

EXECUTIVE SUMMARY

- Options identified elsewhere - and discussed by the Leeds Climate Change Citizens' Jury - include promoting the use of low carbon vehicles, electrification and use of hydrogen for heating and cooking, and planting trees. Carbon emissions could be cut further still through behavioural and consumption-based changes such as the promotion of active travel (e.g. walking and cycling), reductions in meat and dairy consumption and the generation of food waste, and reduced consumption of concrete and steel with more emphasis on green infrastructure.
- As well as reducing Leeds' direct (Scope 1 and 2) carbon footprint, some of these more innovative measures (e.g. reducing meat and dairy or concrete and steel consumption) could start to focus on tackling the city's broader consumption-based (i.e. Scope 3) carbon footprint.

Next Steps

- In 2019, Leeds declared a climate emergency and made a commitment to work towards net-zero emissions by 2030.
- These commitments were reviewed by the Leeds Citizens' Jury, which made a series of recommendations for intensified climate action in the city. These recommendations have been included in the analysis presented here, and they clearly accelerate the rate and inform the path of decarbonisation for the city.
- This roadmap shows that Leeds' net-zero target can be met if a wide range of measures and changes to reduce carbon emissions can be adopted at scale and at pace across the city over the next decade.
- The case for the adoption of such measures is supported by evidence that much – but not all - of the action that is required will improve social, economic and environmental outcomes across the city as well as cutting its carbon emissions. Such measures could form a central part of a post-Covid recovery strategy for the city.
- However, even where there are wider social, economic and environmental benefits, too frequently there are also significant barriers preventing decarbonisation.
- To help to first identify and then to tackle these barriers, the Leeds Climate Commission has undertaken a city-wide Climate Action Readiness Assessment (CARA).
- The CARA process is helping to identify those areas where we are ready to take action to reduce carbon emissions now, those where we could be ready in the near future if some barriers were removed, and those where there are more fundamental challenges to be overcome before we are ready to act. This is helping to develop a timetable for action and priorities for intervention.
- The CARA process especially highlights the need for policy change and the need to stimulate investment. To address these, the Leeds Climate Commission is currently preparing a series of policy briefs to highlight the policy changes required at the local, regional or national scales to unlock low carbon activities across the city. It is also preparing an investment prospectus – with an emphasis on community-based as well as institutional investment – to stimulate low carbon investments across the city.
- These activities should focus initially on Leeds' direct (Scope 1 and 2) carbon footprint as these emissions are most directly under the city's influence. However, we should also recognise the need to consider our broader (consumption-based/Scope 3) carbon footprint – including those from areas such as food and aviation. As stated above, work is currently underway to better understand these broader carbon emissions – and this report will be extended to address these in the near future.

INTRODUCTION

Climate science has proven the connection between the concentration of greenhouse gases in the atmosphere and the extent to which the atmosphere traps heat and so leads to global warming. The science tells us – with a very high level of confidence – that such warming will lead to increasingly severe disruption to our weather patterns and water and food systems, and to ecosystems and biodiversity. Perhaps most worryingly, the science predicts that there may be a point where this process becomes self-fuelling, for example where warming leads to the thawing of permafrost such that significant quantities of greenhouse gases are released, leading to further warming. Beyond this point or threshold, the evidence suggests that we may lose control of our future climate and become subject to what has been referred to as dangerous or "runaway" climate change.

Until recently, scientists felt that this threshold existed at around 2ºC of global warming, measured as a global average of surface temperatures. However, more recent scientific assessments (especially by the IPCC in 2018) have suggested that the threshold should instead be set at 1.5ºC. This change in the suggested threshold from 2ºC to 1.5ºC has led to calls for targets for decarbonisation to be made both stricter (e.g. for the UK to move from an 80% decarbonisation target to a net-zero target, which it did in 2019) and to be brought forward (e.g. from 2050 to 2030), which the UK has not done, although many local authorities and other places have set themselves this ambitious goal.

Globally, the IPCC suggests that from 2020 we can only emit 344 billion tonnes of CO_2 if we want to give ourselves a 66% chance of avoiding dangerous climate change. We are currently emitting over 37 billion tonnes of CO_2 every year, which means that we will have used up our global carbon budget within a decade. It is this realisation – and the ever accumulating science on the scale of the impacts of climate change – that led to calls for organisations and areas to declare a climate emergency and to develop and implement plans to rapidly reduce carbon emissions.

OUR APPROACH

(a). Measuring an Area's Carbon Footprint

Any area's carbon footprint – measured in terms of the total impact of all of its greenhouse gas emissions – can be divided into three types of greenhouse gas emissions.

- Those coming from the fuel (e.g. petrol, diesel or gas) that is directly used within an area and from other sources such as landfill sites or industry within the area. These are known as Scope 1 emissions.
- Those coming from the electricity that is used within the area, even if it is generated somewhere else. These are known as Scope 2 emissions. Together Scope 1 and 2 emissions are sometimes referred to as "territorial" emissions.
- Those associated with the goods and services that are produced elsewhere but imported and consumed within the area. After taking into account the carbon footprint of any goods and services produced in the area but that are exported and consumed elsewhere, these are known as Scope 3 or consumption-based emissions.

In this report[4] we focus on Scope 1 and 2 emissions, and exclude consideration of long-distance travel and of Scope 3 or consumption-based emissions. We do this because Scope 1 and 2 emissions are more directly under the control of actors within an area, and because the carbon accounting and management options for these emissions are better developed.

We stress though that emissions from longer distance travel (especially aviation) and consumption are very significant, and also need to be addressed.

(b). Developing a Baseline of Past, Present and Future Emissions

Having a baseline of carbon emissions is key to tracking progress over time. We use local authority emissions data to chart changes in emissions from 2005 to 2018. We also break this down to show the share of emissions that can be attributed to households, public and commercial buildings, transport and industry.

We then project current emissions levels for the period through to 2050. To do this, we assume on-going decarbonisation of electricity in line with government commitments and a continuation of background trends in a) economic and population growth, and b) energy use and energy efficiency. Specific numbers for the key variables taken into account in the forecasts are presented in the technical annex published separately. As with all forecasts, the level of uncertainty attached increases as the time period in question extends. Even so, it is useful to look into the future to gauge the scale of the challenge to be addressed in each area, especially as it relates to the projected gap between the forecasted emissions levels and those that are required if an area's emissions are to be consistent with a global strategy to limit average warming to 1.5ºC.

[4] Further details of the data, assumptions and methodology are set out in a separate technical annex that is available at https://pcancities.org.uk/reports

(c). Setting Science-Based Carbon Reduction Targets

To set science-based carbon reduction targets for an area, we take the total global level of emissions that the IPCC suggests gives us a 66% chance of limiting average levels of warming to 1.5ºC, and divide it according to the share of the global population living in the area in question. This enables us to set the total carbon budget for an area that is consistent with a global budget. To set targets for carbon reduction, we then calculate the annual percentage reductions from the current level that are required to enable an area to stay within its overall carbon budget.

(d). Identifying and Evaluating Carbon Reduction Opportunities

Our analysis then includes assessment of the potential contribution of approximately 130 energy saving or low carbon measures for:

- **Households and for both public and commercial buildings** (including better insulation, improved heating, more efficient appliances, some small scale renewables)
- **Transport** (including more walking and cycling, enhanced public transport, electric and more fuel efficient vehicles)
- **Industry** (including better lighting, improved process efficiencies and a wide range of other energy efficiency measures).

We stress that the list of options that is assessed may not be exhaustive; other options could be available and the list can potentially be expanded.

For the options included, we assess the costs of their purchase, installation and maintenance, the direct benefits (through energy and fuel savings) of their adoption in different settings and their viable lifetimes. We also consider the scope for, and potential rates of deployment of each option. This allows us to generate league tables of the most carbon- and cost-effective options that could be deployed within an area.

It is important to note that we base the analysis on current capital costs, although future costs and benefits are adjusted for inflation and discounting factors. This could be overly cautious if costs fall and benefits increase as some options become more widely adopted, or if the costs increase as the rates of deployment increase. It is also important to note that, although we consider the employment generation potential of different options, we do not consider the wider indirect impacts of the different options relating to their social, economic or environmental implications.

Beyond the range of currently available options, we also consider the need for more innovative or "stretch" options to be developed and adopted within the area if it is to meet its carbon reduction targets. These need to be developed in each area, but the some of the ideas for innovative options identified elsewhere include targeting a full transition to net-zero homes and public/commercial buildings by 2030, promoting the rapid acceleration of active travel (e.g. walking and cycling), tackling food waste, reducing meat and dairy consumption and reducing concrete and steel consumption/promoting adoption of green infrastructure.

OUR APPROACH

(e). Aggregating Up to See the Bigger Picture

Based on this bottom up analysis of the potential for different options to be adopted within the area, we then aggregate up to assess the potential for decarbonisation within that area, and the costs and benefits of different levels of decarbonisation. We then merge the aggregated analysis of the scope for decarbonisation with the baseline projections of future emissions to highlight the extent to which the gap between the projected and required emissions levels that can be met through different levels and forms of action.

To break this gap down, we merge interventions into three broader groupings:

- **Cost-Effective (CE)** options where the direct costs of adoption are outweighed by the direct benefits that they generate through the energy savings they secure, meaning the portfolio of measures as a whole has a positive economic impact in present value. These options may also generate indirect benefits, for example through job creation, fuel poverty and improved air quality and public health.
- **Cost-Neutral (CN)** options where the portfolio of interventions mentioned above is expanded to consider investments that may not be as cost effective on their own terms, but where the range of measures as a whole will have near-zero net cost.
- **Technical Potential (TP)** options where the direct costs are not (at present) covered by the direct benefits. However, the cost of many low carbon options is falling quickly, and again these options could generate important indirect benefits such as those listed above.

As it is unlikely that adopting all of the cost-effective or even technically viable options will enable an area to reach net-zero emissions, we also highlight the need for a fourth group of measures:

- **Innovative or "stretch" options** that include low-carbon measures that are not yet widely adopted. Some of the options within this group may well be cost- and carbon-effective, and they may also generate significant indirect benefits, but whilst we can predict their carbon saving potential, data on their costs and benefits is not yet available.

(f). Developing Targets and Performance Indicators

Linked to the analysis detailed above, we extend our evaluation of potential emissions reductions across Leeds' economy to substantive, real-life indicators for the levels of investment and deployment required to achieve targets. These Key Performance Indicators (KPIs) illustrate the scale of ambition required to reach the emissions savings presented in the Technical Potential scenario and are disaggregated by sector.

(g). Focusing on Key Sectors

As well as presenting an aggregated picture, we also focus on the emissions saving potential in the housing, public and commercial buildings, transport, industry and waste sectors. We focus in on overall investment needs and returns, and present more detailed league tables of the most carbon- and cost-effective options that could be adopted in each sector.

DEVELOPING A BASELINE OF PAST, PRESENT AND FUTURE EMISSIONS FOR LEEDS

Analysis shows that Leeds' baseline (Scope 1 and 2) emissions have fallen by 40% since 2000, due to a combination of increasingly decarbonised electricity supply, structural change in the economy, and the gradual adoption of more efficient buildings, vehicles and businesses.

With full decarbonisation of UK electricity by 2045, and taking into account economic growth (assumed at 1.5% p.a.), population growth (assumed at 0.1% p.a.) and on-going improvements in energy and fuel efficiency, we project that Leeds' baseline (Scope 1 and 2) emissions will only fall by a further 6% by 2030, 9% by 2040, and 10% by 2050. This is a total of just under 50% between 2000 and 2050.

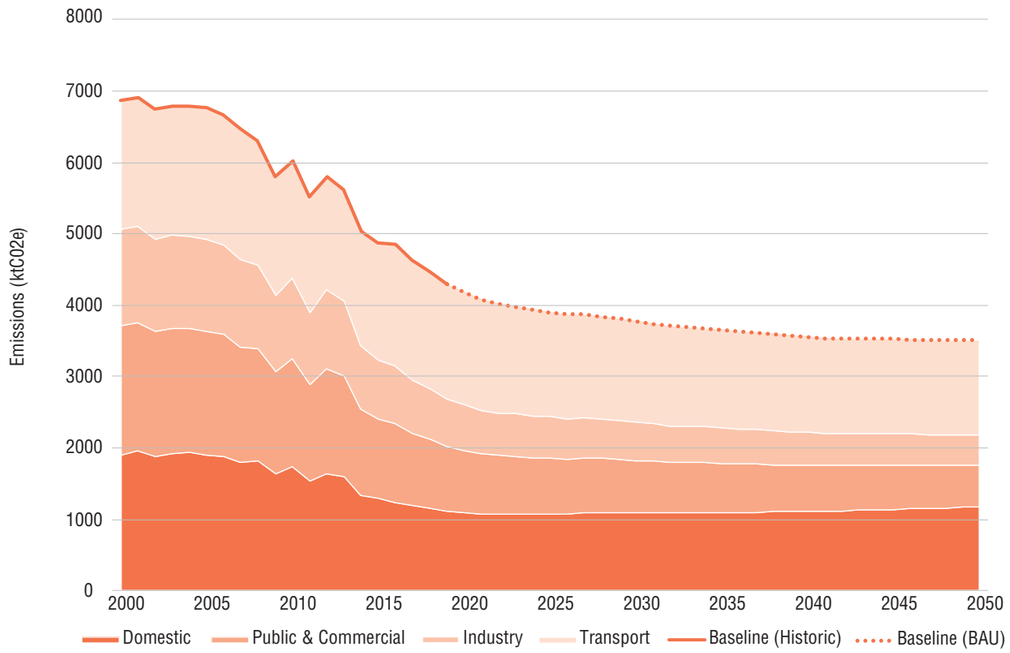

Figure 1: Leeds' Scope 1 and 2 carbon emissions (2000-2050)

Currently, 38% of Leeds' emissions come from the transport sector, with housing responsible for 26% of emissions, public and commercial buildings for 21% and industry 15%. Emissions related to land use contribute c.0.5% and are not considered technically in this report. By 2050, under BAU, we project emissions from transport will decrease very slightly (still producing c.38%) with a significant 7% increase in the proportion of emissions from housing. Small decreases are forecast in the proportion of emissions from public and commercial buildings and industry, largely as a result of expansion in the output of the domestic buildings sector over this period.

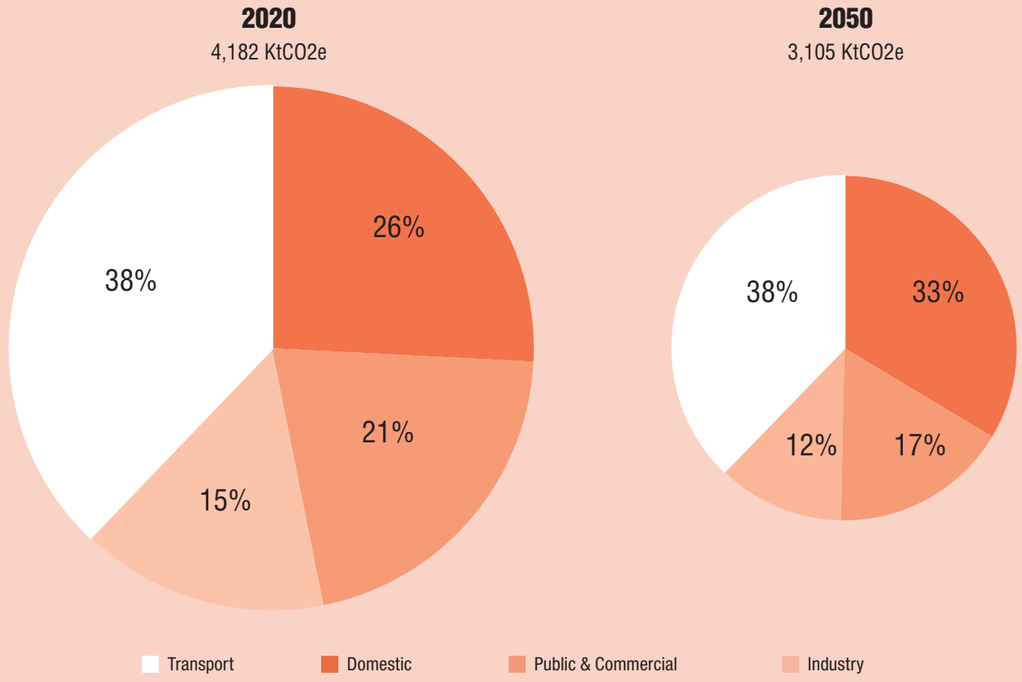

Figure 2: Leeds' Present and Projected Emissions by Sector

DEVELOPING A BASELINE OF PAST, PRESENT AND FUTURE EMISSIONS FOR LEEDS

Related to this emissions baseline, after evaluating the range of energy sources Leeds consumes (spanning electricity, gas, all solid and liquid fuels across sectors) we find that in 2019, £1.4 billion was spent on energy across the city. Transport fuels generated the majority of this demand (51%), followed by domestic buildings (28%) then public and commercial buildings and industry (17% and 4% respectively). By projecting demand and energy prices into future with reasonable baseline assumptions over population, inflationary measures and efficiency gains across the economy, we find that Leeds' business-as-usual (BAU) energy expenditure will likely grow to just over £1.5 billion per year in 2030 and c.£2 billion per year in 2050, with transport expenditure growing to over half (63%) of Leeds' total (see Figure 3 below).

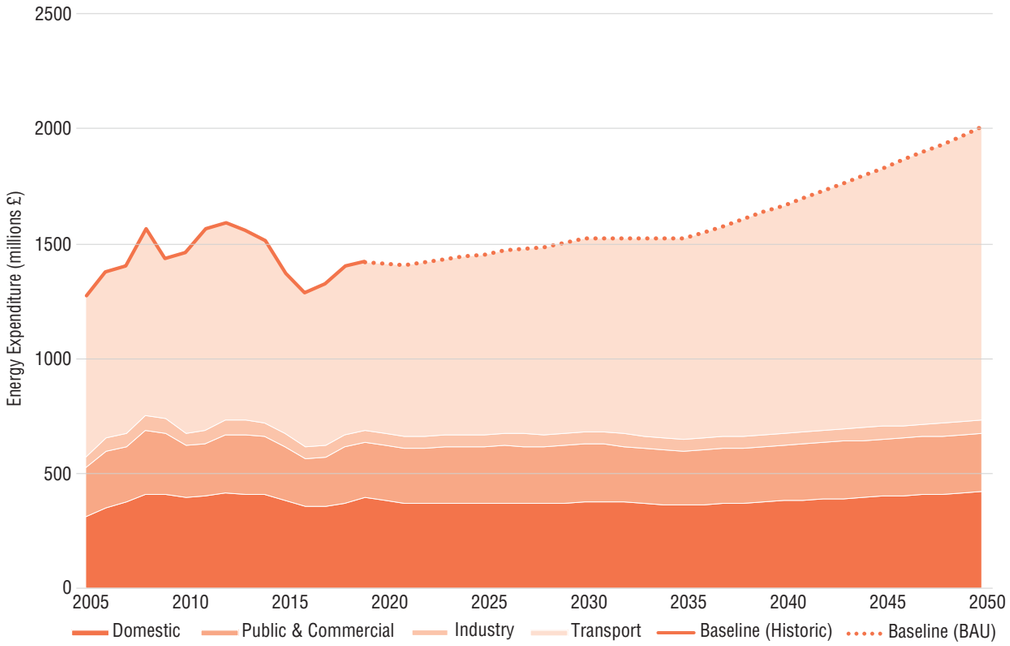

Figure 3: Leeds' Present and Projected Energy Expenditure by Sector

SETTING SCIENCE-BASED CARBON REDUCTION TARGETS FOR LEEDS

The Intergovernmental Panel on Climate Change (IPCC) has argued that from 2020, keeping within a global carbon budget of 344 gigatonnes (i.e. 344 billion tonnes) of CO_2 emissions would give us a 66% chance of limiting average warming to 1.5ºC and therefore avoiding dangerous levels of climate change. If we divide this global figure up on an equal basis by population, and make adjustments so that our budgets include all greenhouse gases, this gives Leeds a total carbon budget of 31 megatonnes over the period between the present and 2050.

At current rates of emissions output, Leeds would use up this budget in 2029. However, Leeds could stay within its carbon budget by reducing its emissions by c.11% year on year. This would mean that to transition from the current position where emissions are 40% lower than 2000 levels to a local pathway that is consistent with the world giving itself a 66% chance of avoiding dangerous, runaway climate change, Leeds should adopt the following carbon reduction targets (on 2000 levels):

70% by 2025

97% by 2040

85% by 2030

99% by 2045

95% by 2035

100% by 2050

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Such a trajectory would mean that the majority of all carbon cuts needed for Leeds to transition to a 1.5ºC consistent pathway need to be delivered by 2030.

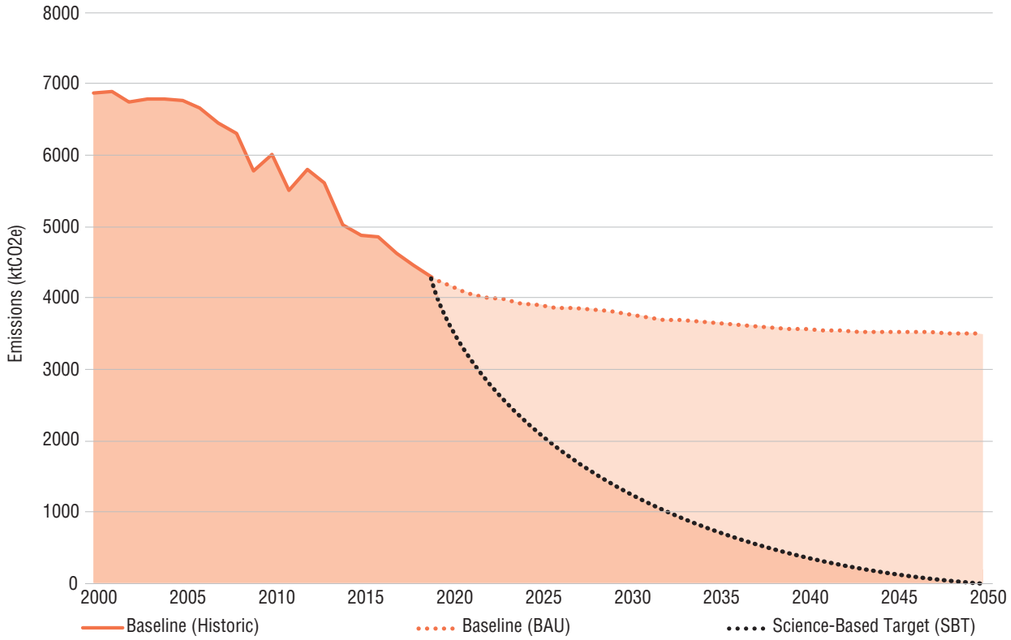

Figure 4: Leeds' Baseline and Science-Based-Target Emissions Pathways

AGGREGATING UP: THE BIGGER PICTURE FOR LEEDS

a) Emissions reductions

Our analysis predicts that the gap between Leeds' business-as-usual (BAU) emissions in 2030 and the net-zero target could be closed by 41% (1.6 MtCO2e) through the adoption of cost-effective (CE) options, by a further 11% (403 ktCO2e) through the adoption of additional cost-neutral (CN) options at no net cost, and then by an additional 8% (287 ktCO2e) through the further adoption of all technically viable (TP = technical potential) options. This means that Leeds still has to identify the innovative or stretch options that could deliver the last 40% (1.5 MtCO2e) of the gap between the business-as-usual scenario and net-zero in 2030 following science-based targets (SBT).

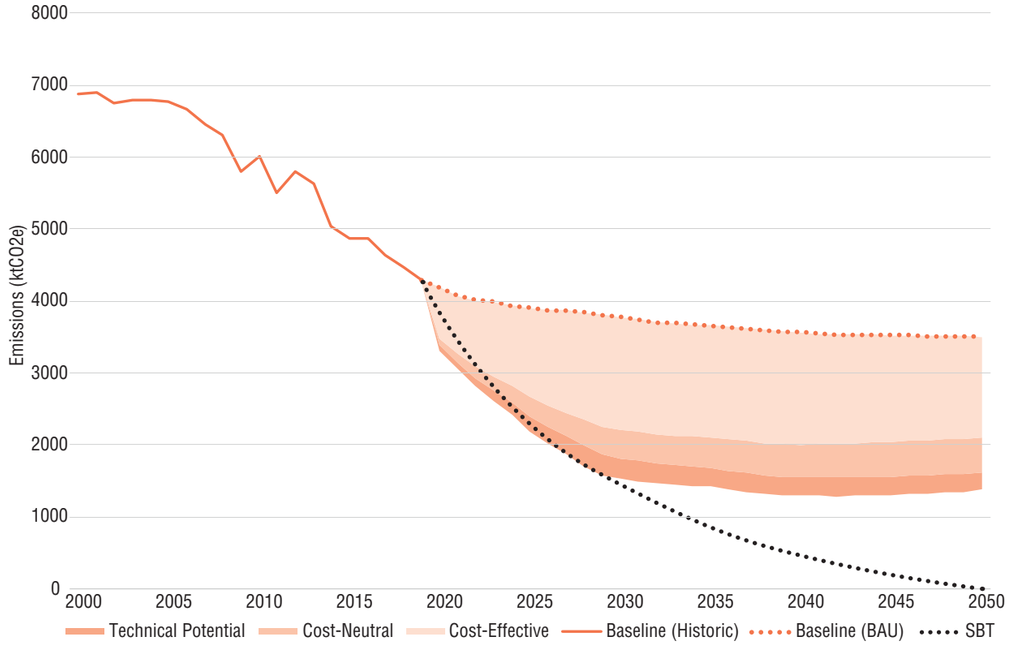

Figure 5: Leeds' BAU Baseline with Cost-Effective, Cost-Neutral, & Technical Potential Scenarios

		2025	2030	2035	2040	2045	2050
Reduction on BAU Baseline (2050)	**CE**	32%	41%	42%	44%	42%	40%
	CN	38%	52%	54%	57%	56%	54%
	TP	44%	60%	61%	64%	63%	61%
Reduction on 2020 Emissions	**CE**	29%	37%	37%	37%	36%	33%
	CN	36%	47%	47%	48%	47%	45%
	TP	41%	54%	53%	54%	53%	51%

Table 1: Leeds' Potential Five-Year Emissions Reduction Percentages

AGGREGATING UP: THE BIGGER PICTURE FOR LEEDS

b) The most carbon- and cost-effect options

Figure 6 below presents the emissions savings that could be achieved through different groups of measures in Leeds. Appendices 1 and 2 present league tables of specific measures and their potential emissions savings over this period.

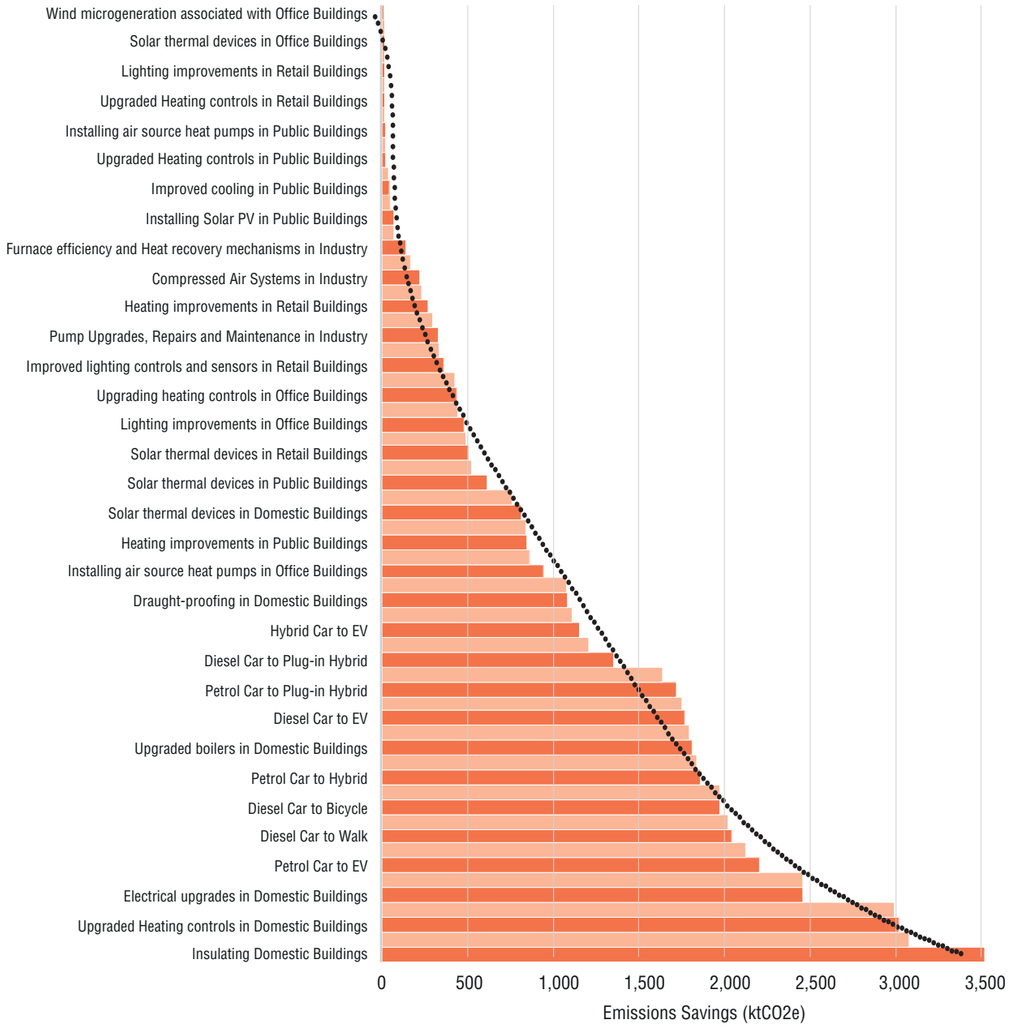

Figure 6: Simplified Emissions Reduction Potential by Measure for Leeds

Simplified league tables of the most cost- and carbon effective options in Leeds are presented below (see the technical annex published separately for more detailed league tables).

Rank	Measure	Cost Effectiveness (£/tCO2e)
1	Compressed Air Systems in Industry	-610
2	Pump Upgrades, Repairs and Maintenance in Industry	-566
3	Diesel Car to Diesel Bus Journeys	-464
4	Fabric improvements in Retail Buildings	-452
5	Petrol Car to Diesel Bus Journeys	-417
6	Diesel Car to Walk Journeys	-372
7	Petrol Car to Walk Journeys	-350
8	Diesel Car to Bicycle Journeys	-348
9	Fabric improvements in Public Buildings	-342
10	Petrol Car to Bicycle Journeys	-326

Table 2: Leeds' Top Ten Most Cost-Effective Emission Reduction Options

Rank	Measure	Emissions Reduction Potential (ktCO2e)
1	Insulating Domestic Buildings	3,520
2	Petrol Car to Bicycle Journeys	3,076
3	Upgraded Heating controls in Domestic Buildings	3,016
4	Petrol Car to Walk Journeys	2,991
5	Electrical upgrades in Domestic Buildings	2,460
6	Installing heat pumps in Domestic Buildings	2,457
7	Petrol Car to EV Journeys	2,202
8	Petrol Car to Electric Bus Journeys	2,124
9	Diesel Car to Walk Journeys	2,040
10	Fabric improvements in Public Buildings	2,021

Table 3: Leeds' Top Ten Most Carbon-Effective Emission Reduction Options

AGGREGATING UP: THE BIGGER PICTURE FOR LEEDS

Some of the ideas for innovative options identified elsewhere, that could also be considered for Leeds, include targeting a full transition to net-zero homes and public/commercial buildings by 2030, promoting the rapid acceleration of active travel (e.g. walking and cycling), tackling food waste, reducing meat and dairy consumption and reducing concrete and steel consumption/promoting adoption of green infrastructure. These are highlighted at the end of our report ("Innovative Stretch Measures for Leeds").

c) Investment needs, paybacks and employment creation

Exploiting the cost-effective options in households, public and commercial buildings, transport, industry and waste could be economically beneficial. Although such measures would require total investments of nearly £6 billion over their lifetimes (equating to investments of £600m a year across all organisations and households in the city for the next decade), once adopted they would reduce Leeds' total energy bill by £651 million p.a. in 2030 whilst also creating 14,823 years of employment (741 full-time jobs for the next 20 years).

By expanding this portfolio of measures to at no net cost to Leeds' economy (the Cost-Neutral scenario), investments of £9 billion over their lifetimes (or £900m a year for the next decade) would generate 22,229 years of employment (or 1,111 jobs for the next 20 years) whilst reducing Leeds' emissions by 52% of projected 2030 levels.

Exploiting all technically viable options would be more expensive (at least at current prices, c.£11 billion or £1,110m a year for the next decade) but realise further emissions savings – eliminating 60% of the projected shortfall in Leeds' 2030 emissions, whilst saving hundreds of millions of pounds on an annual basis.

		2025	2030	2035	2040	2045	2050
Cumulative Investment (£M)	**CE**	3,175	5,272	5,484	5,538	5,542	5,542
	CN	5,257	8,329	8,641	8,716	8,719	8,719
	TP	6,740	10,919	11,280	11,355	11,359	11,359
Annual Energy Expenditure Savings (£M)	**CE**	535	651	649	632	552	501
	CN	416	553	554	537	448	375
	TP	369	555	556	540	454	377

Table 4: Potential Five-Year Investments and Energy Expenditure Savings

Sector	Scenario	Investment (£M)
Domestic	**CE**	2,600
	CN	4,384
	TP	5,523
Public & Commercial	**CE**	1,306
	CN	1,618
	TP	2,623
Industry	**CE**	429
	CN	744
	TP	1,238
Transport	**CE**	1,208
	CN	1,974
	TP	1,974

Table 5: Potential Investments by Sector & Economic Scenario

		Total	Domestic	Industry	Transport	Public & Commercial
Years of Employment	**CE**	**14,823**	5,559	1,467	1,653	6,144
	CN	**22,229**	9,374	2,544	2,702	7,609
	TP	**31,088**	11,811	4,234	2,702	12,341
Jobs (20-year Period)	**CE**	**741**	278	73	83	307
	CN	**1,111**	469	127	135	380
	TP	**1,554**	591	212	135	617

Table 6: Potential Job Creation by Sector & Economic Scenario

DEVELOPING TARGETS AND PERFORMANCE INDICATORS

To give an indication of the levels of activity required to deliver on these broader targets, the tables below detail total deployment across different sectors in Leeds through to 2050. We also give an indication of the rate of deployment required in the city if it is to even come close to its climate targets. These lists are not exhaustive, and also apply by measure; any one building or industrial facility will usually require the application of several measures over the period. These figures effectively become Key Performance Indicators (KPIs) for the delivery of climate action across the city.

Domestic Homes

Measure	Total Homes Applied	Mean Annual Rate of Installation (homes)
Lighting Upgrades	200,058	11,114
Floor Insulation	188,103	10,524
Gas Boiler Upgrades & Repairs	181,340	10,030
Glazing Upgrades	176,676	9,885
Solar thermal	141,157	7,795
Solar PV	138,754	7,678
Thermostats & Heating Controls	136,068	7,499
Loft insulation	125,088	6,984
Wall Insulation	89,548	4,985
Draught Proofing	71,298	3,993
Cavity wall Insulation	59,477	3,284
Heat Pumps	14,648	808

Table 7 (a): Leeds' Sectoral Emissions Reduction KPIs for Domestic Homes

Public & Commercial Buildings

Measure	Floorspace Applied (m^2)	Mean Annual Rate of Installation (m^2)
Office Lighting Upgrades	1,824,991	102,310
Lighting/Heating Controls and Sensors	7,253,707	418,900
Retail Heating Upgrades	7,032,178	410,809
Wind Turbines	4,023,813	223,545
Office Fabric Improvements	1,779,828	102,042
Office Solar PV	612,517	34,617
Office Heat Pumps	612,517	34,547

Table 7 (b): Leeds' Sectoral Emissions Reduction KPIs for Public & Commercial Buildings

Transport

Measure	Deployment
High Quality Protected Cycling Highways Built	28 kilometres
Additional Electric Buses Procured and In Service	203 per annum
Increase in Public Transport Ridership	13M trips per annum
Additional EVs Replacing Conventional Private Cars	15,241 per annum

Table 7 (c): Leeds' Sectoral Emissions Reduction KPIs for Transport

FOCUSING ON KEY SECTORS IN LEEDS

At full deployment (technical potential) across Leeds, we calculate that there is potential to avoid 63 MtCO2e in emissions that will otherwise be produced in the city between 2020 and 2050.

The domestic housing and transport sectors will contribute most significantly towards this total, with a combined decarbonisation potential of between 35 MtCO2e (cost-effective scenario) and 48 MtCO2e (technical potential) through the period. However, industry and public and commercial buildings also play a major role; upgrading and retrofitting of Leeds' built environment (including public and commercial buildings) reduce emissions by up to c.12 MtCO2e over the same period at full technical potential, with industry similarly showing the potential to decarbonise nearly 3 MtCO2e under the same conditions.

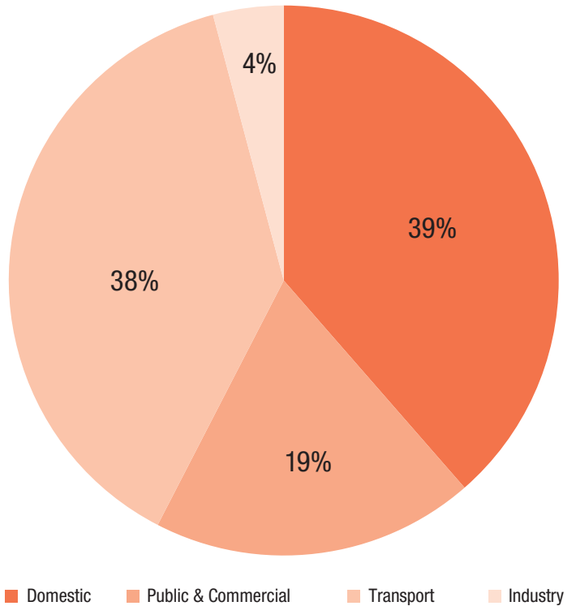

Figure 7: Leeds' Emissions Reduction Potential (2020-2050) by Sector

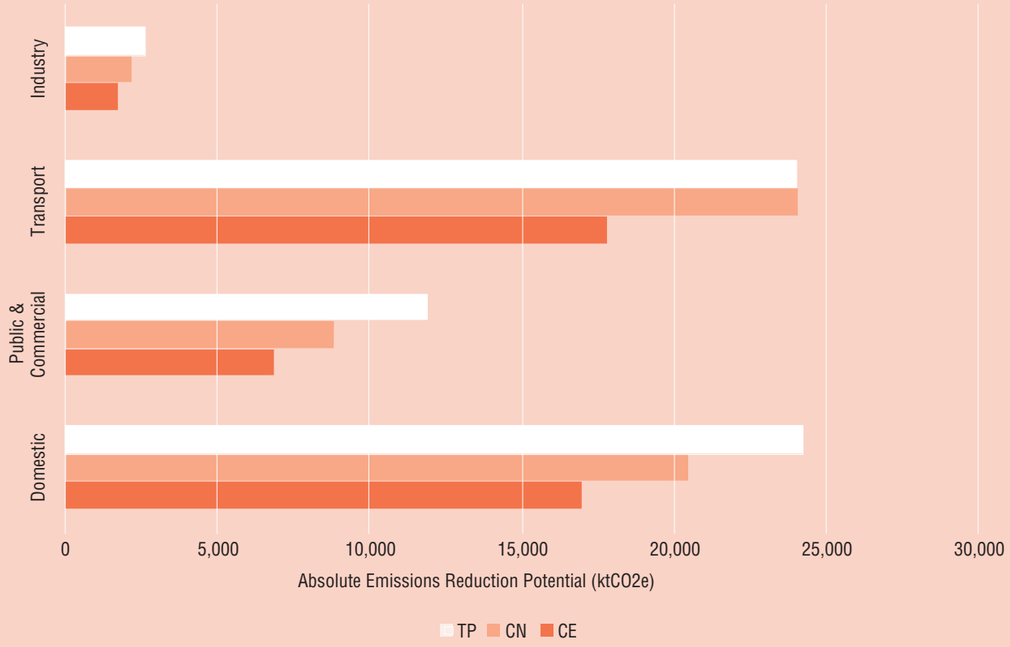

Figure 8: Leeds' Emissions Reduction Potential By Sector & Economic Scenario (2020-2050)

FOCUSING ON KEY SECTORS IN LEEDS

In the following section, summaries of the emissions reduction potential and economic implications of investment are presented for the four main sectors comprising this analysis. For display and continuity purposes, each sector is displayed with a summary of the same metrics: (1) emissions reduction potential over time in the three economic scenarios, (2) five-year totals for cumulative emissions savings, investment requirements and annual energy expenditure reductions, and (3) a simplified table of the most cost-effective low carbon measures applied in each sector across Leeds.

(a). Domestic Housing

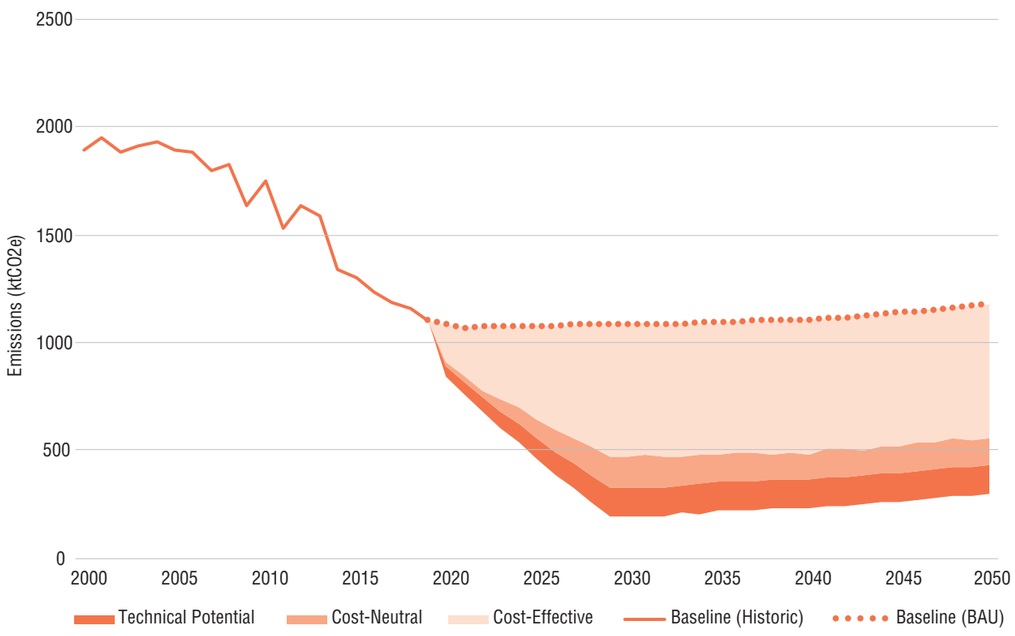

Figure 9: Housing BAU Baseline with Cost-Effective, Cost-Neutral and Technical Potential Scenarios

		2025	2030	2035	2040	2045	2050
Emissions Reductions (ktCO2e)	**CE**	432	618	620	605	624	626
	CN	520	762	740	737	744	744
	TP	617	899	871	871	878	879
Annual Energy Expenditure Savings (£M)	**CE**	124	141	136	131	117	117
	CN	155	175	169	162	145	145
	TP	129	143	139	134	123	123
Cumulative Investment (£M)	**CE**	1,481	2,472	2,600	2,600	2,600	2,600
	CN	2,559	4,198	4,384	4,384	4,384	4,384
	TP	3,235	5,288	5,523	5,523	5,523	5,523

Table 8: Housing Emissions Reductions, Expenditure Savings and Investment Levels

Rank	Measure	Cost Effectiveness (£/tCO2e)
1	Electrical Appliance & Fixture Upgrades	-180
2	High Efficiency Lighting Improvements	-158
3	Electricity Demand Reduction	-106
4	Draught-proofing & Fabric Improvements	-39
5	Installing Heat Pumps	-31
6	Glazing improvements & Upgrades	-29
7	Upgraded Heating Controls	-26
8	Installing Biomass Boilers	-19
9	Solar PV and Thermal Device Installation	-14
10	Upgraded Boilers	-10

Table 9: The Most Cost-Effective Measures for Housing

FOCUSING ON KEY SECTORS IN LEEDS

(b). Public & Commercial Buildings

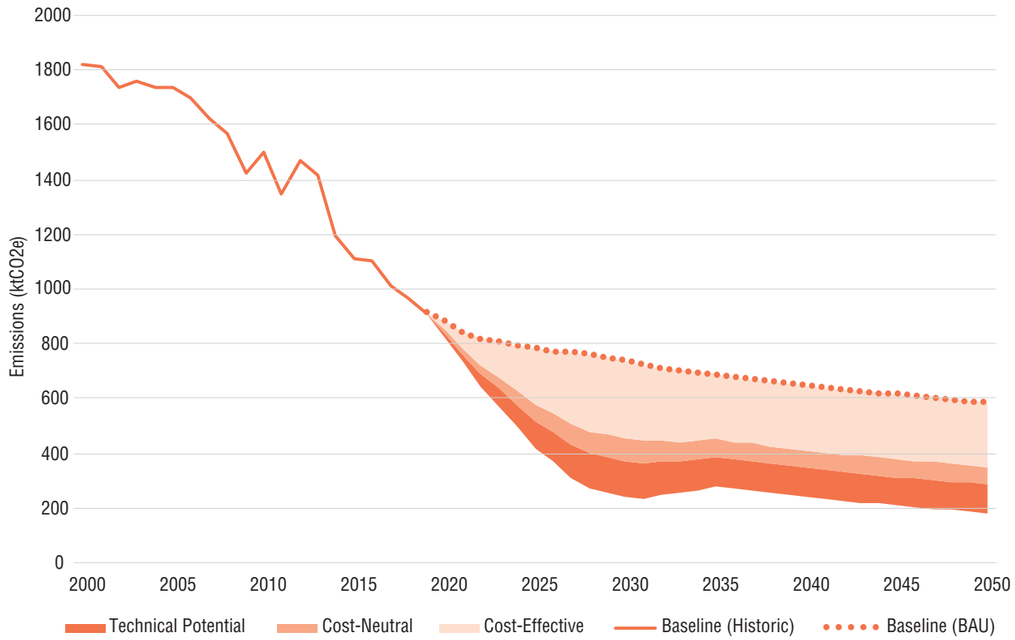

Figure 10: Public and Commercial Buildings BAU Baseline with Cost-Effective, Cost-Neutral and Technical Potential Scenarios

		2025	2030	2035	2040	2045	2050
Emissions Reductions (ktCO2e)	**CE**	210	279	235	236	239	239
	CN	271	359	302	301	305	303
	TP	371	488	410	408	408	408
Annual Energy Expenditure Savings (£M)	**CE**	201	228	221	211	187	188
	CN	48	55	53	51	45	45
	TP	72	83	80	76	68	68
Cumulative Investment (£M)	**CE**	817	1,306	1,306	1,306	1,306	1,306
	CN	1,130	1,618	1,618	1,618	1,618	1,618
	TP	1,641	2,623	2,623	2,623	2,623	2,623

Table 10: Public and Commercial Buildings Emissions Reductions, Expenditure Savings and Investment Levels

Rank	Measure	Cost Effectiveness (£/tCO2e)
1	Fabric Improvements in Retail Buildings	-452
2	Fabric Improvements in Public Buildings	-342
3	Improved Cooling in Retail Buildings	-301
4	Lighting Improvements in Public Buildings	-176
5	Improved Cooling in Office Buildings	-147
6	Lighting Improvements in Retail Buildings	-138
7	Heating Improvements in Public Buildings	-104
8	Improved Cooling in Public Buildings	-83
9	Lighting Improvements in Office Buildings	-64
10	Heating Improvements in Office Buildings	-59

Table 11: The Most Cost-Effective Measures for Public and Commercial Buildings

FOCUSING ON KEY SECTORS IN LEEDS

(c). Transport

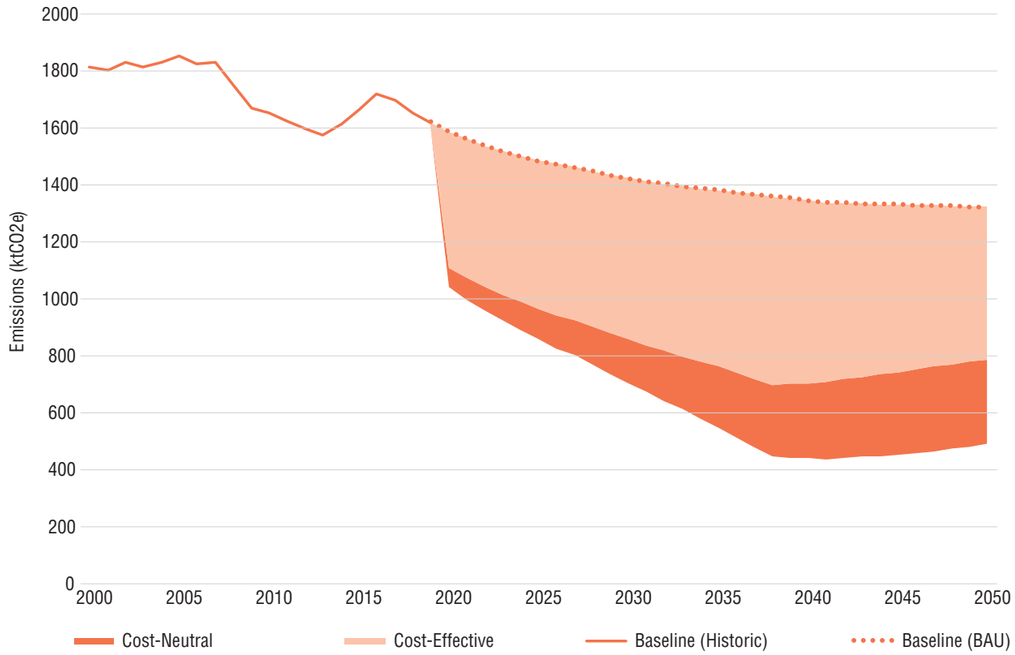

Figure 11: Transport BAU Baseline with Cost-Effective and Cost-Neutral Scenarios[5]

		2025	2030	2035	2040	2045	2050
Emissions Reductions (ktCO2e)	**CE**	521	566	622	640	588	535
	CN	627	719	835	905	882	833
	TP	627	719	835	905	882	833
Annual Energy Expenditure Savings (£M)	**CE**	224	235	244	251	223	197
	CN	252	265	273	275	228	185
	TP	252	265	273	275	228	185
Cumulative Investment (£M)	**CE**	619	1,065	1,150	1,203	1,208	1,208
	CN	1,122	1,770	1,896	1,971	1,974	1,974
	TP	1,122	1,770	1,896	1,971	1,974	1,974

Table 12: Transport Emissions Reductions, Expenditure Savings and Investment Levels

Rank	Measure (as Journey Shift)	Cost Effectiveness (£/tCO2e)
1	Diesel Car to Diesel Bus Journey	-464
2	Petrol Car to Diesel Bus Journey	-417
3	Diesel Car to Walk Journey	-372
4	Petrol Car to Walk Journey	-350
5	Diesel Car to Bicycle Journey	-348
6	Petrol Car to Bicycle Journey	-326
7	Petrol Car to Plug-in hybrid Journey	-255
8	Diesel Car to Plug-in hybrid Journey	-152
9	Petrol Car to Hybrid Journey	-136
10	Petrol Car to EV Journey	-134

Table 13: The Most Cost-Effective Measures for Transport

[5] Due to the high inherent cost effectiveness of many transport modal shift options, the TP scenario has been removed and emissions pathways are covered by CE and CN only.

FOCUSING ON KEY SECTORS IN LEEDS

(d). Industry

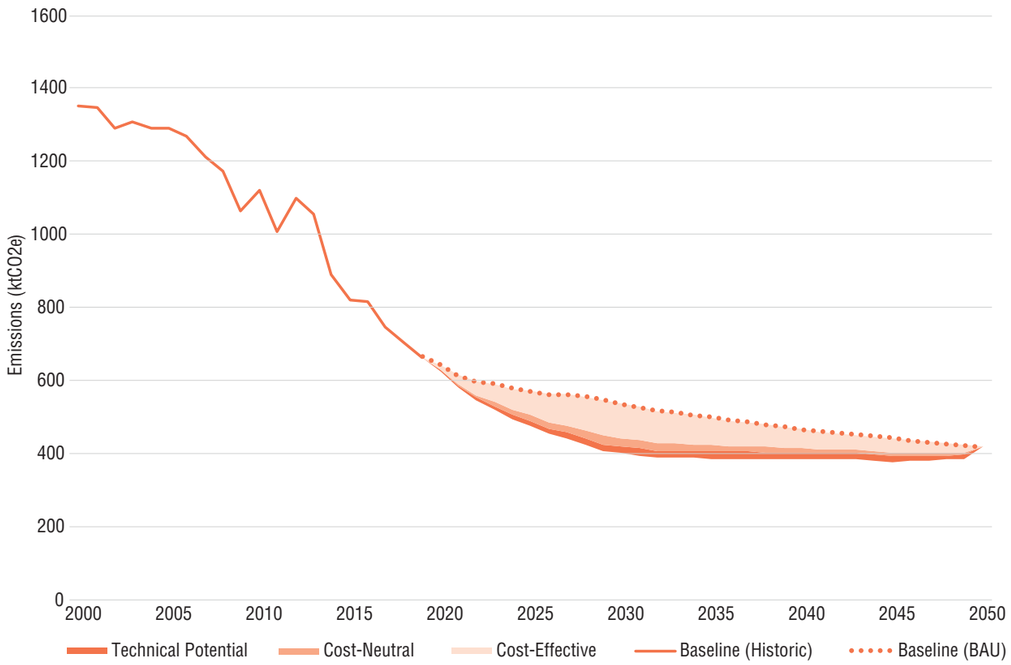

Figure 12: Industry BAU Baseline with Cost-Effective, Cost-Neutral and Technical Potential Scenarios

		2025	2030	2035	2040	2045	2050
Emissions Reductions (ktCO2e)	**CE**	67	94	76	53	39	23
	CN	83	117	93	65	48	27
	TP	96	137	112	82	64	37
Annual Energy Expenditure Savings (£M)	**CE**	-15	47	47	39	24	12
	CN	-39	58	58	49	30	14
	TP	-85	64	64	55	35	17
Cumulative Investment (£M)	**CE**	257	429	429	429	429	429
	CN	446	744	744	744	744	744
	TP	743	1,238	1,238	1,238	1,238	1,238

Table 14: Industry Emissions Reductions, Expenditure Savings and Investment Levels

Rank	Measure[6]	Cost Effectiveness (£/tCO2e)
1	Compressed Air Systems in Industry	-610
2	Pump Upgrades, Repairs and Maintenance in Industry	-566
3	Fan Correction, Repairs, & Upgrades in Industry	-299
4	Compressors and Variable Speed Systems in Industry	-223
5	Improving Efficiency of Boilers and Steam Piping in Industry	-71
6	Refrigeration Efficiency and Technical Upgrades in Industry	15
7	Condensing & Insulation Measures to Boilers & Steam Piping in Industry	48
8	Furnace Efficiency and Heat Recovery Mechanisms in Industry	539

Table 15: The Most Cost-Effective Measures for Industry

[6] For display purposes interventions in industry have been aggregated here into process type

INNOVATIVE STRETCH MEASURES FOR LEEDS

Even with full delivery of the broad programme of cross-sectoral, city-wide low carbon investment described above, there remains an emissions shortfall of 40% between Leeds's 2030 BAU baseline and the net-zero target. Here we briefly consider the productivity of certain key technologies and interventions that may well be able to plug this gap into the future. Many of these so-called "stretch options" are innovative by nature but they will be required to reach Leeds' targets in future.

		2025	2030	2035
Annual Emissions Reduction Potential (ktCO2e)	Zero carbon heavy goods transport	68	319	313
	Electrification of industrial heating and cooling	40	38	22
	Electrification of domestic heating	26	133	189
	Electrification of domestic cooking	8	44	63
	Electrification of commercial and public heating	14	42	14
	Hydrogen-based heating (H21)	0	289	275
	2000 Ha Annual Reforestation (2020-29)*	133	343	422

Table 16: Decarbonising Potential of Stretch Measures (*Sequestration Values)

Figure 13 below shows the impact that the adoption of these stretch measures would have on Leeds' carbon emissions, with the black dotted line showing the business-as-usual baseline, the orange dotted line showing emissions after adoption of all technically viable options and the grey dotted line showing emissions after all technically viable and stretch options. This indicates that Leeds would still have some residual emissions through to 2050. For illustration, the grey shaded area shows that in theory Leeds could offset its residual emissions through a UK based tree planting scheme; however this would require the planting of 89 million trees, which even with the densest possible planting would require 20,000 hectares of land, equivalent to 36% of the total land area of the city.

Carbon emissions could be cut further still through with the adoption of behavioural and consumption-based changes such as the promotion of active travel (e.g. walking and cycling), reductions in meat and dairy consumption and the generation of food waste, and reduced consumption of concrete and steel with more emphasis on green infrastructure. Such consumption-based changes – which would impact on the broader Scope 3 carbon footprint of the city – will be the focus of future work.

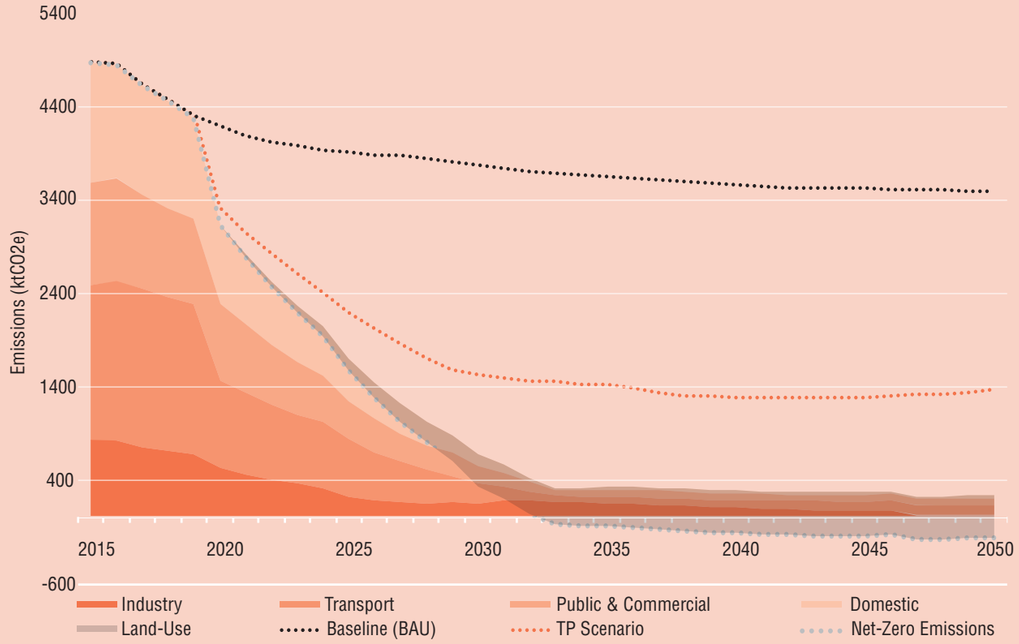

Figure 13: Sectoral Emissions Shortfall Reduction with Stretch Measures

NEXT STEPS FOR LEEDS

Leeds has already made a commitment to work towards net-zero emissions by 2030. This roadmap shows we can get very close to meeting this ambitious target if a wide range of measures and changes to reduce carbon emissions can be adopted at scale and at pace across the city over the next decade. The case for the adoption of such measures is supported by evidence that much – but not all – of the action that is required will improve social, economic and environmental outcomes across the city as well as cutting its carbon emissions. Such measures could form a central part of a post-Covid recovery strategy for the city.

However, even where there are wider social, economic and environmental benefits, too frequently there are also significant barriers preventing decarbonisation. To help to first identify and then to tackle these barriers, the Leeds Climate Commission is currently undertaking a city-wide Climate Action Readiness Assessment (CARA). The CARA process is helping to identify those areas where we are ready to take action to reduce carbon emissions now, those where we could be ready in the near future if some barriers were removed, and those where there are more fundamental challenges to be overcome before we are ready to act. This is helping to develop a timetable for action for the Commission, and priorities for intervention.

Key barriers to decarbonisation in Leeds emerging from the CARA process relate to the need for policy change and the need to stimulate investment. To address these, the Commission is currently preparing a series of policy briefs to highlight the policy changes required at the local, regional or national scales to unlock low carbon activities across the city. It is also preparing an investment prospectus – with an emphasis on community-based as well as institutional investment – to stimulate low carbon investments across the city. The Commission is also restructuring itself to develop action groups to support, catalyse, guide and track low carbon initiatives in housing, public and commercial buildings and transport across the city.

These activities should focus initially on Leeds' direct (Scope 1 and 2) carbon footprint as these emissions are most directly under the city's influence. However, we should also recognise the need to consider our broader (consumption-based/Scope 3) carbon footprint – including those from areas such as food and aviation. As stated above, work is currently underway to better understand these broader carbon emissions – and this report will be extended to address these in the near future.

APPENDIX 1. LEAGUE TABLE OF THE MOST CARBON-EFFECTIVE OPTIONS FOR LEEDS

Measure	Emissions Reduction Potential (ktCO2e)
Insulating Domestic buildings	3,520
Petrol Car to Bicycle Journeys	3,076
Upgraded Heating controls in Domestic buildings	3,016
Petrol Car to Walk Journeys	2,991
Electrical upgrades in Domestic buildings	2,460
Installing heat pumps in Domestic buildings	2,457
Petrol Car to EV Journeys	2,202
Petrol Car to Bus (electric) Journeys	2,124
Diesel Car to Walk Journeys	2,040
Fabric improvements in Public buildings	2,021
Diesel Car to Bicycle Journeys	1,974
Fabric improvements in Retail buildings	1,973
Petrol Car to Hybrid Journeys	1,859
Petrol Car to Bus (diesel) Journeys	1,838
Upgraded boilers in Domestic buildings	1,810
Installing solar PV in Domestic Buildings	1,793
Diesel Car to EV Journeys	1,767
Diesel Car to Bus (electric) Journeys	1,753
Petrol Car to Plug-in hybrid Journeys	1,720
Electricity demand reduction in Domestic buildings	1,639
Diesel Car to Plug-in hybrid Journeys	1,352
Diesel Car to Bus (diesel) Journeys	1,207
Hybrid Car to EV Journeys	1,153
Condensing & Insulation Measures to Boilers & Steam Piping in Industry	1,109
Draught-proofing in Domestic buildings	1,081
Lighting improvements in Domestic buildings	1,078
Installing air source heat pumps in Office buildings	942
Installing biomass boilers in Domestic buildings	862
Heating improvements in Public buildings	847
Glazing improvements in Domestic buildings	841
Solar thermal devices in Domestic buildings	816
Improving Efficiency of Boilers and Steam Piping in Industry	758
Solar thermal devices in Public buildings	614
Improved lighting controls and sensors in Public buildings	522
Solar thermal devices in Retail buildings	504
Improved cooling in Office buildings	488

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Measure	Emissions Reduction Potential (ktCO2e)
Lighting improvements in Office buildings	480
Wind microgeneration associated with Public buildings	443
Upgrading heating controls in Office buildings	438
Diesel Car to Hybrid Journeys	426
Improved lighting controls and sensors in Retail buildings	362
Improved lighting controls and sensors in Office buildings	336
Pump Upgrades, Repairs and Maintenance in Industry	328
Lighting improvements in Public buildings	297
Heating improvements in Retail buildings	271
Fan Correction, Repairs, & Upgrades in Industry	234
Compressed Air Systems in Industry	219
Compressors and Variable Speed Systems in Industry	169
Furnace Efficiency and Heat Recovery Mechanisms in Industry	139
Refrigeration Efficiency and Technical Upgrades in Industry	71
Installing solar PV in Public buildings	70
Fabric improvements in Office buildings	49
Improved cooling in Public buildings	44
Improved cooling in Retail buildings	39
Upgraded heating controls in Public buildings	23
Installing solar PV in Office buildings	21
Installing air source heat pumps in Public buildings	20
Heating improvements in Office buildings	18
Upgraded heating controls in Retail buildings	17
Installing air source heat pumps in Retail buildings	17
Lighting improvements in Retail buildings	14
Wind microgeneration associated with Retail buildings	14
Solar thermal devices in Office buildings	13
Installing solar PV in Retail buildings	13
Wind microgeneration associated with Office buildings	13
TOTAL	**62,806**

APPENDIX 2. LEAGUE TABLE OF THE MOST COST-EFFECTIVE OPTIONS FOR LEEDS

Measure	Cost Effectiveness (£/tCO2e)
Compressed Air Systems in Industry	-610
Pump Upgrades, Repairs and Maintenance in Industry	-566
Diesel Car to Bus (diesel)	-464
Fabric improvements in Retail buildings	-452
Petrol Car to Bus (diesel)	-417
Diesel Car to Walk	-372
Petrol Car to Walk	-350
Diesel Car to Bicycle	-348
Fabric improvements in Public buildings	-342
Petrol Car to Bicycle	-326
Improved cooling in Retail buildings	-301
Fan Correction, Repairs, & Upgrades in Industry	-299
Petrol Car to Plug-in hybrid	-255
Compressors and Variable Speed Systems in Industry	-223
Electrical upgrades in Domestic buildings	-180
Lighting improvements in Public buildings	-176
Lighting improvements in Domestic buildings	-158
Diesel Car to Plug-in hybrid	-152
Improved cooling in Office buildings	-147
Lighting improvements in Retail buildings	-138
Petrol Car to Hybrid	-136
Petrol Car to EV	-134
Petrol Car to Bus (electric)	-128
Electricity demand reduction in Domestic buildings	-106
Heating improvements in Public buildings	-104
Improved cooling in Public buildings	-83
Improving Efficiency of Boilers and Steam Piping in Industry	-71
Lighting improvements in Office buildings	-64
Diesel Car to Bus (electric)	-64
Insulating Domestic buildings	-63
Heating improvements in Office buildings	-59
Diesel Car to EV	-45
Heating improvements in Retail buildings	-44
Draught-proofing in Domestic buildings	-39
Installing heat pumps in Domestic buildings	-31

Measure	Cost Effectiveness (£/tCO2e)
Fabric improvements in Office buildings	-30
Glazing improvements in Domestic buildings	-29
Upgraded heating controls in Domestic buildings	-26
Upgrading heating controls in Office buildings	-19
Installing biomass boilers in Domestic buildings	-19
Solar thermal devices in Domestic buildings	-14
Diesel Car to Hybrid	-13
Upgraded heating controls in Public buildings	-12
Upgraded boilers in Domestic buildings	-10
Upgraded heating controls in Retail buildings	-6
Installing air source heat pumps in Retail buildings	-1
Installing solar PV in Domestic Buildings	2
Hybrid Car to EV	3
Installing air source heat pumps in Public buildings	8
Refrigeration Efficiency and Technical Upgrades in Industry	15
Solar thermal devices in Retail buildings	24
Installing air source heat pumps in Office buildings	33
Improved lighting controls and sensors in Retail buildings	36
Installing solar PV in Public buildings	43
Condensing & Insulation Measures to Boilers & Steam Piping in Industry	48
Installing solar PV in Office buildings	54
Installing solar PV in Retail buildings	57
Improved lighting controls and sensors in Office buildings	60
Solar thermal devices in Public buildings	74
Solar thermal devices in Office buildings	86
Improved lighting controls and sensors in Public buildings	164
Wind microgeneration associated with Office buildings	186
Wind microgeneration associated with Public buildings	209
Wind microgeneration associated with Retail buildings	257
Furnace Efficiency and Heat Recovery Mechanisms in Industry	539

PLACE-BASED CLIMATE ACTION NETWORK (PCAN)

The Place-based Climate Action Network (PCAN) is about translating climate policy into action "on the ground" in our communities. PCAN commenced in January 2019 with the aim of establishing an agile, effective and sustainable network for climate action that is embedded in localities and based around partnerships with local authorities. The objective is to build broader capacity to effect transformative change.

PCAN is an ESRC-supported network that brings together the research community and decision-makers in the public, private and third sectors. It consists of five innovative platforms to facilitate two-way, multi-level engagement between researchers and stakeholders: three city-based climate commissions (in Leeds, Belfast and Edinburgh) and two theme-based platforms on adaptation and finance, with a business theme integrated into each climate commission.

Our vision is for PCAN to produce a replicable model that delivers climate policies on a global to local scale, facilitating and inspiring places across the UK, and this has started to take off: alongside the original PCAN commissions we are delighted to support new climate commissions that have established in places such as Lincoln, Surrey and Croydon, with ever more new commissions coming on stream across the UK.

The five-year project is led by an experienced team of researchers with strong track records of engaging with public, private and third-sector decision-makers. PCAN builds on the policy connections, networking capacity and research strengths of its host institutions: Queen's University Belfast, the University of Edinburgh, the University of Leeds and the London School of Economics and Political Science.

For more information, go to **https://pcancities.org.uk** or contact **pcan@lse.ac.uk**

PARTNERSHIPS

UKRI Economic and Social Research Council

PCAN PLACE-BASED CLIMATE ACTION NETWORK

THE UNIVERSITY of EDINBURGH

UNIVERSITY OF LEEDS

QUEEN'S UNIVERSITY BELFAST

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

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PCAN PLACE-BASED CLIMATE ACTION NETWORK

Published November 2020

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Report author: Harriet Speight
Tel: 0113 37 89954

Report of the Chief Officer (Sustainable Energy and Air Quality)

Report to Climate Emergency Advisory Committee

Date: 10 March 2021

Subject: Annual Report to Executive Board on the Climate Emergency

Are specific electoral wards affected? If yes, name(s) of ward(s):	☐ Yes ☒ No
Has consultation been carried out?	☐ Yes ☒ No
Are there implications for equality and diversity and cohesion and integration?	☐ Yes ☒ No
Will the decision be open for call-in?	☐ Yes ☒ No
Does the report contain confidential or exempt information? If relevant, access to information procedure rule number: Appendix number:	☐ Yes ☒ No

1. Purpose of this report

1.1 The purpose of this report is to introduce the annual Climate Emergency report considered at the Executive Board meeting held 10th February 2021, which provides an update on the progress being made towards reducing emissions at both a national and local level, setting out key actions that have been undertaken. The report also reflects upon the impact of the Covid-19 pandemic on both emissions and how the road to recovery can be founded in the green economy.

2. Main issues

2.1 The Chief Officer (Sustainable Energy and Air Quality) will present the Executive Board report (Appendix A) at the meeting.

3. Recommendations

3.1 The Climate Emergency Advisory Committee is asked to note the contents of the report and presentation.

4. Background documents[1]

[1] The background documents listed in this section are available to download from the council's website, unless they contain confidential or exempt information. The list of background documents does not include published works.

4.1 None.

Report author: Polly Cook
Tel: 0113 37 85845

Report of Director of Resources and Housing

Report to Executive Board

Date: 10th February 2021

Subject: Annual Report on the Climate Emergency

Are specific electoral wards affected? If yes, name(s) of ward(s):	☐ Yes ☒ No
Has consultation been carried out?	☐ Yes ☒ No
Are there implications for equality and diversity and cohesion and integration?	☐ Yes ☒ No
Will the decision be open for call-in?	☒ Yes ☐ No
Does the report contain confidential or exempt information? If relevant, access to information procedure rule number: Appendix number:	☐ Yes ☒ No

Summary

1. Main issues

- 2021 is a key year in the fight against the climate emergency.
- The pandemic has had complex effects on emissions but with an estimated overall reduction of 13% from 2019 to 2020. It has significantly reduced emissions from the private car as traffic levels across the city drop by up to 40%. The impact of the covid-19 pandemic has also reduced the use of public transport and we have seen greater prioritisation of walking and cycling. Schemes such as the district heating and transport schemes have been able to progress more quickly due to the reduced traffic levels but others have been slowed down due to the impact on staffing level and/or the ability to complete works within private residences.
- As we start to emerge from the pandemic, we must focus on consolidating the trends that have supported this rapid reduction in emissions such as increased home working and buying more locally, and we must look to rebuild the economy with a focus on long term sustainability.
- At a council level, the pandemic has had a number of impacts that will support our ambition to reduce our emissions by 50% by 2025:
    - grey fleet mileage has been reduced by 46%, with some services adopting new ways of working on a permanent basis;
    - it has accelerated our estate rationalisation programme due to the high level of people that are working from home;

    - we have secured funding to support the retrofit of some of our buildings through the public sector decarbonisation fund that forms part of the government's green recovery package.

- In November, the UK will host the United Nations Global Climate Summit COP 26 in Glasgow and the spotlight will be on the progress that the UK has made.
- On 9 December 2020 the UK Climate Change Committee released its Sixth Carbon Budget report, including a specific local authority report. This reflects that there is a disconnect between the differing tiers of Government and the ability to act on climate change in seeking to achieve net zero. Government policy at a national level does not always connect to the plans, powers and ambitions otherwise sitting at a Combined Authority, Local Authority or indeed Town and Parish level.
- At the end of 2020 we saw a number of key policy changes such as the ban on the sale of new diesel and petrol cars and vans by 2030 and we also saw the government increasing its targeted reduction by 2030 from 57% to 68%. Although all of these announcements are encouraging, they still do not reflect the required urgency and the speed of change that is needed to restrict climate change to 1.5°C. Therefore there is a key role for the council to continue to engage its citizens on this agenda and to work with government to bring about the policy changes that are required.
- The updated roadmap produced by the Leeds Climate Commission demonstrates the rate at which the various measures such as heat pumps, solar panels etc. need to be installed to meet the emissions reductions pathway.
- Funding continues to be a key barrier to the pace of change that is required. By the end of 2020 the council had secured more than £15 million of grant to support additional energy efficiency work across both the domestic and public estate sectors, with the outcomes of a number of other funding bids still awaited. Although this funding is testament to the focus and the resource that the council has continued to place on the climate emergency, it is still only a tiny fraction of what will be required across the city.
- The city has also been successful in securing 60,000 Euros to develop an investment portfolio, which will provide the foundations to start to attract more of the private funding required to move at pace.
- The Climate Emergency Advisory Committee has also played a key role in 2020, helping to provide a place for the voice of our residents, young people and businesses to be heard. It has also ensured that a large number of councillors have had the benefit of hearing from external speakers on a number of climate related topics, helping to improve the understanding of our decision makers.
- Building on the success of the Leeds Climate Commission (a model that has already been replicated in many cities across the country), the creation of the new Yorkshire and Humber Climate Commission was recently announced, with a formal launch in March 2021. Leaders from councils, businesses, utilities, unions and environmental groups from across Yorkshire and Humber are coming together to tackle the climate crisis head on through an ambitious new partnership. It will be the biggest regional commission of its kind and will provide the region with a united voice to call for the changes and support required at a national level. A key focus of the commission will be ensuring that the transition to a net zero economy is a just transition and to ensure that green jobs and skills are developed across the region.

2. Best Council Plan Implications (click here for the latest version of the Best Council Plan)

- The climate emergency is one of the three key priorities of the council, alongside inclusive growth and health and wellbeing. Much of the work described in this report supports not just the climate emergency agenda but also the other two key priorities by bringing people out of fuel poverty, encouraging exercise through active transport and tree planting, supporting inward investment in green technologies and helping to develop green jobs

3. Resource Implications

- Despite the significant impacts of covid-19 the council has continued to prioritise the climate emergency, dedicating resource to maximise the money secured through the different recovery schemes proposed by government.
- The council has already secured over £15.5 million of funding through the government's green recovery schemes for completing energy efficiency works in both the domestic sector and public sector estate as well through the Heat Network Investment Programme. This will complement the £24 million that had already been secured from European funding and will improve over 5,000 domestic properties as well as all of our city centre estate and will support the extension of our district heating network.
- As funding is a key challenge, securing 60,000 Euros to develop an investment portfolio for the city provides a fantastic opportunity to identify practical ways to secure the required investment. Coupled with our on-going engagement in national groups to explore how appropriate levels of funding can be secured, this is fundamental to meeting the challenging targets.

Recommendations

a) Note the intention to report on the council's scope 3 emissions in the next annual report, in line with the climate commission's proposed approach for the city

b) Note the intention to bring a domestic energy strategy to executive board in summer 2021

1. Purpose of this report

1.1 This report provides an update on progress towards reducing emissions at both a national and local level, setting out key actions that have been undertaken. It will also reflect on the impact of the pandemic on both emissions and how the road to recovery can be founded in the green economy.

2. Background information

2.1 A carbon footprint measures the impact of activities on global warming through their greenhouse gas emissions. Where organisations are concerned, greenhouse gas emissions are categorised into three different groups or 'scopes' and are usually referred to as 'direct' or 'indirect' emissions. Scope 1 emissions cover the direct emissions from an organisation's owned sources that can be controlled by that organisation, for example company vehicles and heating sources. Scope 2

emissions are the indirect emissions from the energy that is purchased and used by an organisation. This includes the emissions created in energy production and how the energy is subsequently used by an organisation. Examples of scope 2 emissions include the electricity used to power office appliances. Scope 3 emissions include all the indirect emissions that occur within an organisation's supply chain and are outside an organisation's direct control.

2.2 In January 2020 a climate emergency update paper was brought to Executive board that made a number of commitments at a council level. The table below shows that council intends to halve its scope 1 and 2 emissions by 2025.

	Tonnes CO_2e 2018	**Tonnes CO_2e 2025**
Streetlighting	13,821	0
Buildings (gas)	28,618	20,600
Buildings (electricity)	18,107	1,405
Fleet	10,274	9,000
Total	70,820	31,005

2.3 This will be delivered by a commitment to move towards low emissions vehicles, removing payments for staff using diesel or petrol cars post 2025 and a transition towards 100% green electricity.

2.4 The global covid-19 pandemic has shocked social and economic systems around the world. The first lockdown brought Britain to a near standstill, with road travel plummeting by as much as 73%, to levels not seen since 1955. However, carbon dioxide levels in the atmosphere have risen strongly to a new peak this year, despite the impact of the global effects of the coronavirus crisis. The sudden fall in greenhouse gas emissions and air pollutants recorded during covid-19 lockdowns will only have a negligible impact on global temperature change. Researchers forecast that, even with some lockdown measures staying in place to the end of 2021, global temperatures will only be around 0.01°C lower than expected by 2030. However, the international study, led by the University of Leeds, also found that economic recovery plans with strong green stimuli and climate policies could prevent more than half of the additional warming expected by 2050. This would provide a good chance of global temperatures staying below the Paris Agreement's aspirational 1.5˚C target, according to the researchers, avoiding 0.3˚C of extra warming and the associated severe impacts and risks.

2.5 The past decade was the hottest ever recorded globally, with 2019 either the second or third warmest year on record, as the climate crisis accelerated temperatures upwards worldwide, scientists have confirmed. Every decade since 1980 has been warmer than the preceding decade, with the period between 2010 and 2019 the hottest yet since worldwide temperature records began in the 19th century. The increase in average global temperature is rapidly gathering pace, with the last decade up to 0.39°C warmer than the long-term average, compared with a 0.07°C average increase per decade stretching back to 1880. The past seven years, 2014 to 2020, have been the warmest since global records began, a period

that has included enormous heatwaves in the US, Europe and India, abnormally hot temperatures in the Arctic, and deadly wildfires from Australia to California to Greece. 2019 was either the second hottest year ever recorded, according to Nasa and the National Oceanic and Atmospheric Administration, or the third hottest year, as recorded by the UK Met Office. Overall, the world has heated up by about 1°C on average since the pre-industrial era.

2.6 The UK set four high temperature records in 2019 as climate change continued to have a clear impact on the country's weather, according to the Met Office. Its sixth State of the UK Climate report outlines how an all-time record of 38.7° C was set last July, along with a winter high of 21.2°C in February, and temperatures of 18.7°C and 13.9°C in December and February respectively. No national low-temperature records were set during 2019, which the Met Office said was the twelfth warmest year since 1884, and one of the least snowy. Most of the UK received above average rainfall.

2.7 Nevertheless, the trend of falling UK greenhouse gas emissions has continued with a drop of 2.1% in 2018 compared with the previous year, according to the latest statistics published by BEIS, and greenhouse gas emissions in 2018 are estimated to be 43.1% lower than they were in 1990.

2.8 Parliament arranged the UK's first ever Citizens' Climate Assembly during 2020. The assembly was made up of 108 people from diverse backgrounds, who took part in meetings to discuss reducing greenhouse gas emissions. A final report of the assembly said recovering from covid-19 should be used as an opportunity to achieve net zero carbon emissions and pursue different lifestyles to help tackle the climate crisis, including a frequent flyers tax and a reduction in meat and dairy consumption. A large majority, 79% of the assembly, either strongly agreed or agreed that economic recovery after the pandemic must be designed to help drive the country to its 2050 net zero target, which was enshrined in legislation last year.

2.9 The UK will be hosting the delayed United Nations global climate summit COP 26 (Convention of the Parties) in Glasgow (between 1 and 12 November 2021). Leeds is working with other UK Core Cities to demonstrate local authority action on climate change. This has included Leeds' endorsement of the Net Zero Local Leadership pledge through our participation in the UK100 network. The pledge commits the Council to bring the organisation's emissions to Net Zero by 2030 (as set out in the January 2020 Executive Board report) and to work with our residents and businesses to bring our wider communities' emissions in line with net zero as soon as possible (and by 2045 at the latest). Similarly Leeds has also endorsed the European Covenant of Mayors pledge to reduce greenhouse gas emissions by 85% by 2030 and reach net zero emissions by 2050, although it is hoped that Leeds will achieve this target by a much earlier date (our local ambition set out in the January 2020 Executive Board report is for the city to be net-zero by 2030). The pledge was signed by a total of 27 European cities including Barcelona, Prague and Stockholm.

2.10 2020 has also seen a flurry of national policy announcements:

- The Chancellor set out how the government intends to deliver £100bn capital expenditure in roads, rail, housing, schools and hospitals, underpinned by a new infrastructure strategy and bank. The infrastructure investment is underpinned by

a new National Infrastructure Strategy, which centres around three goals: economic recovery, the levelling up agenda, and meeting the UK's net zero emissions target by 2050.

- The Prime Minister announced a 10-point plan for a Green Industrial Revolution and also set out a proposed new carbon target. This proposes a reduction of 68% in annual carbon emissions by 2030, compared with 1990 levels, a significant increase on the current target of about 57% reductions.

- Increased national ambition was reinforced by the recent publication of the Energy White Paper setting the direction of travel for energy policy as the sector decarbonises over the next three decades. The paper proposes a number of initiatives including:

    - A refreshed greenhouse gas emissions trading scheme for large emitters to replace the current system once the UK leaves the European Union;

    - Further development of nuclear power, and long term ambitions for nuclear fusion;

    - Decarbonisation of the power sector with a significant expansion of offshore wind capacity and the gradual phase out of coal generation by October 2024;

    - £1bn investment in carbon capture and storage at four industrial clusters by 2030;

    - Significant investment in hydrogen production;

    - BEIS says all newly-installed heating systems should be low-carbon by the mid-2030s. Gas supplies to homes would either be converted to hydrogen, where available, or domestic heating would have to move to heat pumps instead. A consultation will open on ending gas connections to new homes from 2025.

    - £1.3bn investment in electric vehicle charging as sales of fossil fuelled cars and vans are ended by 2030;

    - Extension of the Warm Homes Discount Scheme and Green Homes Grant (announced earlier during the summer economic update).

2.11 The Heat and Buildings Strategy, Hydrogen Strategy, Industrial Decarbonisation Strategy and Transport Decarbonisation Plan are all due next year, culminating in the Net Zero Hydrogen Strategy ahead of COP26.

2.12 On 9 December 2020 the UK Climate Change Committee released its Sixth Carbon Budget report, including a specific local authority report. This reflects that there is a disconnection between the differing tiers of Government and the ability to act on climate change in seeking to achieve net zero. Government policy at a national level does not always connect to the plans, powers and ambitions otherwise sitting at a Combined Authority, Local Authority or indeed Town and Parish level. It notes that

this is not fully the case in Scotland and Wales, where arguably there is much greater integration in climate change aims and ambitions.

2.13 The report identifies how local authorities can support the implementation of the Sixth Carbon Budget through influencing matters at a local level relating to buildings, transport, waste, electricity, land use, forestry and agriculture. Leeds' activities in these area were summarised in the January 2020 Executive Board report.

2.14 The Climate Change Committee report recommends that in order to enable local authorities to effectively deliver climate action in the UK, the Government will need to develop clear policy, including guidance on the role of local authorities in delivering Net Zero, and empower local authorities with appropriate levels of funding and support.

3. Main issues

3.1 Council's emissions - Data

3.1.1 The table below shows the council's carbon reductions from 2018 to 2019 across its scope 1 and 2 emissions.

	Tonnes CO_2e 2018	**Tonnes CO_2e 2019**	**Improvement 2018 to 2019**	**2025 Target Tonnes CO_2e**
Street lighting	13,821	12,258	-11%	0
Buildings (gas)	28,618	26,087	-9%	20,600
Buildings (electricity)	18,107	16,730	-8%	1,405
Fleet	10,274	10,324	0%	9,000
Total	70,820	65,399	-8%	31,005

3.1.2 To date we have primarily focused on reporting scope 1 and 2 emissions as there has been limited precedents available for reporting on scope 3 emissions. However, the climate commission has committed to providing a first estimate of the city's scope 3 emissions in the summer (Scope 3 emissions include the goods and services purchased by an organisation, investments, employee and business travel, transportation, and waste disposal) and as a council we will also endeavour to quantify our scope 3 emissions.

3.1.3 For some organisations, scope 3 emissions often represent the largest proportion of total emissions and it is therefore important that these emissions are identified and reported in carbon neutrality targets. In most cases, it has been reported that scope 3 accounts for 80% of an organisation's emissions and – for some organisations – can account for as much as 97% of total emissions.

Corporate Estate

3.1.4 The council has continued to work to reduce carbon emissions from its estate.

3.1.5 The scheme to transfer the city's street lighting to LEDs has continued to be rolled out, with over 25,000 lights now converted to LED, resulting in a 3.9 million kWh reduction in electricity consumption and a saving of 909 tonnes CO_2 each year. Moving forward, a further 1,900 lanterns per month will be replaced up until the planned completion of the roll-out in October 2023.

3.1.6 An interest free Government loan (via Salix Finance Ltd) was secured earlier in the year to the value of £241k to install LED lighting in the Woodhouse Lane car park, along with movement and lumen sensors. The purpose of the scheme was to reduce energy consumption both when the car park was being used and out-of-hours.

3.1.7 Leeds Building Services (LBS) were commissioned to undertake this work and completed the scheme in December 2020. Although data is not yet available to demonstrate the full impacts of the scheme, substantial reductions have already been observed, and energy consumption is expected to reduce by at least 50%, which would equate to a reduction of over 280,000 kWh and 65 tonnes CO_2e per annum.

3.1.8 In addition to this, the Department of Business, Energy & Industrial Strategy (BEIS) opened the £1 billion Public Sector Decarbonisation Scheme (PSDS) in autumn 2020, offering grant funding to support the decarbonisation of heat in non-domestic public sector buildings.

3.1.9 In anticipation of this opportunity, the Sustainable Energy & Air Quality team, LBS, Corporate Property Management and a range of other internal and external partners have been working together this year to carry out technical feasibility assessments and identify a range of viable schemes to submit to BEIS. A total of five bids to the grant scheme between October and December 2020.

3.1.10 The combined value of the proposals is £25.2m, with bids including the installation of air source heat pumps, connections to district heating network, solar PV, building energy management systems, LED lighting, double glazing, variable speed drives, metering and radiator upgrades.

3.1.11 A total of 43 sites are covered, including 9 leisure centres, 4 civic buildings, 12 primary schools and a further mix of offices, depots, children's centres and homes for older people

3.1.12 Timescales for delivery associated with the grant scheme are challenging. All works for which funding is received must be completed by the end of September 2021. If successful, the schemes would enable an estimated 3,145 tonnes CO2e to be saved per year upon completion and would support the local green economy, safeguarding or creating an estimated 280 jobs.

3.1.13 Although the focus this year has been to maximise this new potential opportunity to secure PSDS grant funding, the existing Salix finance scheme will continue to be explored as a means of funding the further expansion of renewable generation and energy efficiency measures across the Council's buildings and schools.

3.1.14 Asset Management have continued to lead the programme of rationalisation of the council's estate, with the changes in ways of working resulting from covid-19

restrictions highlighting the scope for rationalisation of office space in particular, as well as exploring opportunities across the wider estate. 65 buildings remain closed and their future is being reconsidered. Properties no longer required for operational purposes will be sold via the Capital Receipt programme. A separate report elsewhere on this agenda provides an update on the Capital Receipt Programme.

3.1.15 The council also approved a target in January 2020 to move to 100% electricity provided from green sources through entering into a power purchase agreement, but with the ambition to continually move to more locally produced renewables over the next ten years. In light of the opportunity presented by the Public Sector Decarbonisation Scheme to accelerate the roll-out of renewable generation capacity across the council's own estate, the emphasis this year has been more on the latter part of this target. However, the council is still actively seeking opportunities to enter into a corporate agreement that will see all of its electricity demand met from renewable sources, but that will provide sufficient flexibility to accommodate the rapidly changing profile of its future energy requirements.

3.1.16 These measures combined will deliver substantial progress towards the commitment made in January 2020 to a rationalisation and energy efficiency programme which will reduce emissions from council buildings by a further 40% by 2025.

Fleet and Grey Fleet

3.1.17 The Corporate Fleet will benefit from the Electric Vehicle Trial Centre, with the trial fleet being absorbed into the corporate fleet at the end of the Trial Centre programme. The trial centre has a fleet of 45 vehicles currently, with the additional 18 larger vans providing 63 further electric vehicles (EV) to complement the existing fleet of 300 zero emission vehicles. The development of the charging infrastructure for fleet is ongoing with the roll out of new charge facilities at depot sites and officers' homes. This includes a significant charge hub installation at the Seacroft Ring Road site that will support the growing EV fleet used by Leeds Building Services. The fleet replacement programme is being developed with the internal target of all vehicles using alternative fuel where possible and to align with the city target of Carbon Neutrality by 2030.

3.1.18 Work has continued to promote sustainable alternatives to council staff for business related travel ('grey mileage') in support of the aim to remove payment of expenses for travel in staff petrol and diesel cars by 2025. However, covid-19 restrictions have unsurprisingly had a huge impact in reducing levels of staff business mileage this year, with expense claims for 2020 at 54% of the mileage claimed for 2019.

3.1.19 During covid-19 over 8000 staff worked from home. A survey carried out in June 2020 showed that there was significant support from staff to keep working from home the future.

52% of staff expressed a desire to remain working remotely for most or all of the time, and over 80% wishing to work from home for more than half of their week.

- In terms of the future office environment, **the tasks that staff would prioritise if they had limited time in the office in future** were: team meetings, collaboration with colleagues, training and development and personal social interaction.

3.1.20 Clearly, the promotion and expansion of sustainable travel alternatives for staff have also been impacted by covid-19 given the implications for use of public transport and initiatives such as car-sharing. However, the 'cycle to work' scheme has now been extended to allow the purchase of bikes (including e bikes) up to a value of £3,000, and also repayments over 24 months in order to make the scheme more affordable. Since May 2020, over 300 bikes have been purchased through the scheme, more than for any of the last five years. The 'Car Club' pool car scheme has been adapted to ensure provision of covid secure vehicles, and is due to be re-procured by WYCA in 2021.

3.1.21 Although the availability of sustainable travel alternatives and a review of the expenses policy will remain central to achieving the council's aim to reduce grey mileage, consolidating new and more efficient ways of working that have emerged during this year will be of equal importance, and all services have been challenged to identify and realise these opportunities.

3.1.22 Housing Leeds represents an example of a major front-line service area which has seen substantial reductions in grey mileage since April. Housing have had to adapt the way in which services are provided in response to covid measures, but are now looking to maintain these new ways of working in order to secure efficiencies and reduce carbon emissions:

"When the lockdown happened in March, Housing Leeds adjusted service offers across all service areas, to managing almost all of its customer contact remotely, by telephone and digitally. A number of activities which have always traditionally been completed face-to-face, including housing needs assessments, annual home visits of Council tenants and tenant and community meetings are now being carried out differently – by phone, text, email or video communications.

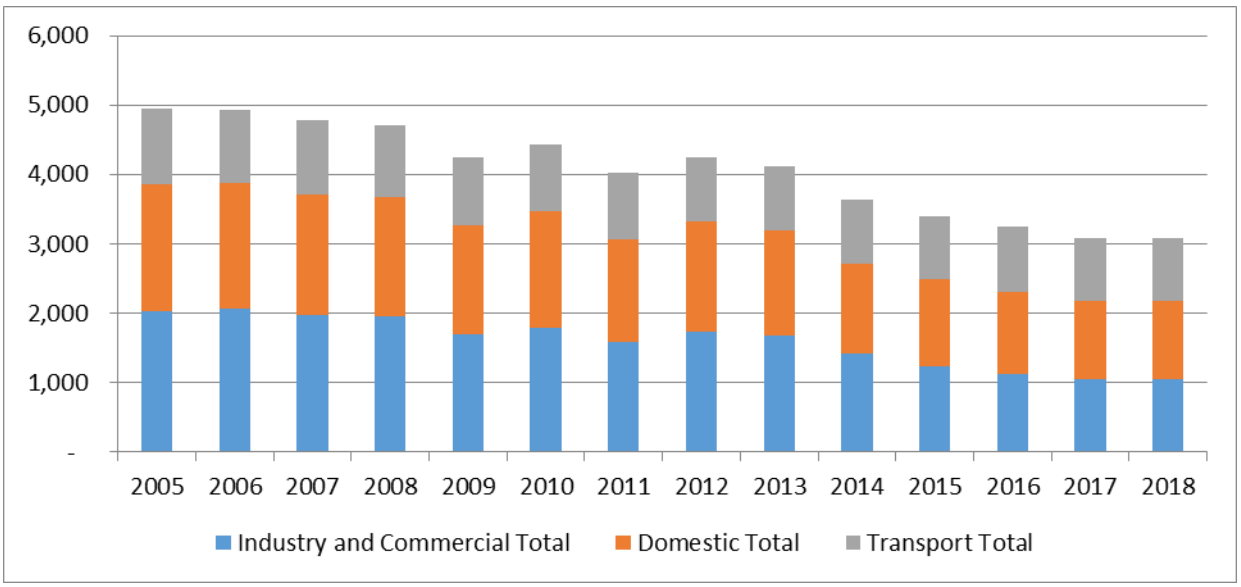
"Housing is trialling some software to support this approach, including a remote video tool allowing an officer to view inside a tenant's home via their smartphone in order to diagnose a repair issue and offer self-help guidance if appropriate, and also some engagement software to continue to seek tenant views on service delivery.

"Lessons learnt from lockdown and these pilots will be used to develop Housing's longer term service offers with a focus on delivering services in the most efficient and effective way. This is likely to incorporate a mixture of digital and telephone engagement, alongside direct face-to-face customer contact where this remains the most effective way of providing services. A key driver for developing Housing's service offers is to progress more efficient ways of working, but also to support achievement of the Council's carbon reduction targets."

3.2 City's Emissions

3.3 **Data**

3.3.1 The graph below shows the reduction in emissions at a city level since 2005 until 2018. This data is collated by BEIS. The values exclude emissions from large industrial sites, railways, motorways and land use.



3.3.2 The breakdown of this data against sub categories is detailed below:

	Mega (i.e. million) tonnes CO2
Industry and Commercial	1.052
Domestic	1.118
Transport	9.18
Total	3.088

3.3.3 Similar to the council's own emissions, the focus to date has been on scope 1 and 2 emissions but as detailed above the Climate Commission has agreed to provide an estimate of the city's scope 3 emissions in summer 2021.

3.4 Transport

3.4.1 During lockdown traffic levels in the city reduced by over 40% with a corresponding reduction in emissions. With the reduced traffic levels planned improvements in the city for walking, cycling and bus priority have been fast tracked and additional trial measures brought forward with Emergency Active Travel Funding. Over £200m of transport infrastructure works are being delivered across the city including Regent Street Bridge replacement, 2 Park & Ride site expansions and a new site at Stourton, major changes to pedestrian and bus facilities the city centre on the Headrow, Park Row and Infirmary Street, bus lanes on the A647 and A639 and 100km of segregated cycle lanes across the city.

Transport Strategy

3.4.2 In December 2020 the draft Connecting Leeds Transport Strategy was presented to Executive Board with the intention of starting public consultation in early 2021. The report can be found here. A few key extracts relating to the climate emergency can be found at 3.26 and 3.27 of the report.

3.4.3 The overarching Connecting Leeds vision is for "Leeds to be a city where you don't need a car". Achieving this vision of moving our transport system away from

personal car ownership, towards more efficient, low carbon, shared, active and public transport based system will:

- Allow individuals to choose the most suitable transport option for each journey.
- Dramatically reduce the number of vehicles needed.
- This efficiency will translate into reduced cost of travel for all.
- Reduce congestion by making more efficient use of the road space available.
- Reduce carbon emissions and improve air quality.
- Allow more efficient use of land, with less space needed for parking.

3.4.4 Tackling Climate Change and meeting our City pledge for carbon neutrality by 2030 is one of the greatest challenges we face. The way we manage transport over the next decade has important implications for our streets, public places, our future growth as a city and future generations in terms of addressing the climate emergency. Motorised traffic makes a significant contribution to environmental challenges we face as a city To begin to resolve these problems, Leeds must become a city where walking, cycling and green public transport become the most appealing and practical choices for many more journeys. Every journey matters and our aim is to change the transport mix and reduce the number of car journeys. Therefore we need to:

- Reduce the need for travel and the number of car journeys
- Shift people from cars to public transport and active travel
- Improve the efficiency of the transport network through public transport investment to make best use of our road space and tackle congestion

Electric Vehicles - National

3.4.5 The office for low emission vehicles (OLEV) has rebranded as the Office for Zero Emission Vehicles (OZEV) to reflect the changing priorities of government to focus on increasing zero emission vehicle uptake rather than ultra-low emission vehicles. Their stated focus remains on plug-in vehicles and supporting infrastructure at the present time. This charge reflects the government's target to end the sale of conventional engine vehicles by 2030, therefore creating the need to ramp up support at a national level for uptake of plug in or hydrogen vehicles. The launch of green number plates is a further measure designed to raise awareness of zero-emission vehicles (ZEVs) as well as provide a way for ZEV owners to access Zero Carbon zones, or benefit from local schemes that support zero carbon vehicles. Green plates can be retrofitted to any vehicles that has zero-carbon emissions at the tailpipe.

Electric Vehicle Trial Centre

3.4.6 Leeds City Council's Electric Vehicle Trial Centre continues to support the uptake of ZEV's across businesses, the public sector and third sector organisations with all vehicles out on trials and with a fully booked forward plan for trials. The Trial Centre is also now licensed as an operator for private hire, with its fleet of Nissan Leaf cars licensed for use as private hire vehicles. This means that we can now also support private hire driver trials of ZEV's, which can be used as licensed vehicles. The first drivers will commence the trial process in January 2021.

3.4.7 As well as supporting organisations trialling electric vans and cars, it has also been providing e-bikes for trial and will be supporting trials of E-Cargo bikes in January 2021. Additionally the Centre will be adding 18 larger capacity vans that boast 75kW batteries – providing greater range through a Highways England funded procurement, with these newly available vehicles expected to be available for trials from May 2021. These will greatly increase the opportunities for businesses to switch to EV as the additional payload capacity and range makes the vehicles suitable for duties that the smaller existing vans may not be able to deliver.

3.4.8 Feedback to the Trial Centre has been overwhelmingly positive, the van scheme has had 100% satisfaction feedback from completed trials, with 75% reporting that the scheme had positively changed their opinion towards EV's and 67% stating they are already looking to purchase or lease their own EV following the scheme. This feedback has been similarly reflected in the E-Bike scheme.

Electric Vehicle Charging Network

3.4.9 The council is continuing to work to support the expansion of the charge network across the city and beyond. Working on a regional project with WYCA and Engie there have been 17 dual bay rapid chargers now installed in Leeds. These provide both 50kW DC Rapid or 22kW AC fast charging and service two bays, one for public use and one for taxi & private hire use. A minimum of 30 units will be installed by spring 2021, with this network remaining free to use until 29th October 2021. There have been over 26,000 charging sessions; an average of 7 events per day at each site, delivered across this network in Leeds alone (to 14th Dec 2020) providing 360,000 kWh of power to EV drivers. This equates to approximately 2.5million miles of zero-emission driving supported by this network.

3.4.10 Leeds has also successfully applied for funding from OZEV's On-street Residential Charging Scheme (ORCS) that enable local authorities to apply for up to £100k towards charge infrastructure in residential locations. The £97,500 award made to Leeds will support the delivery of charge points in residential areas in Leeds based on a community hub approach at off-street locations supporting areas characterised as lacking in off-street parking. The scheme is aiming to deliver of 15 dual 7kW or 22kW fast chargers (subject to site power capacity), with a contract being agreed with a charge point operator to supply, install, manage and maintain the network.

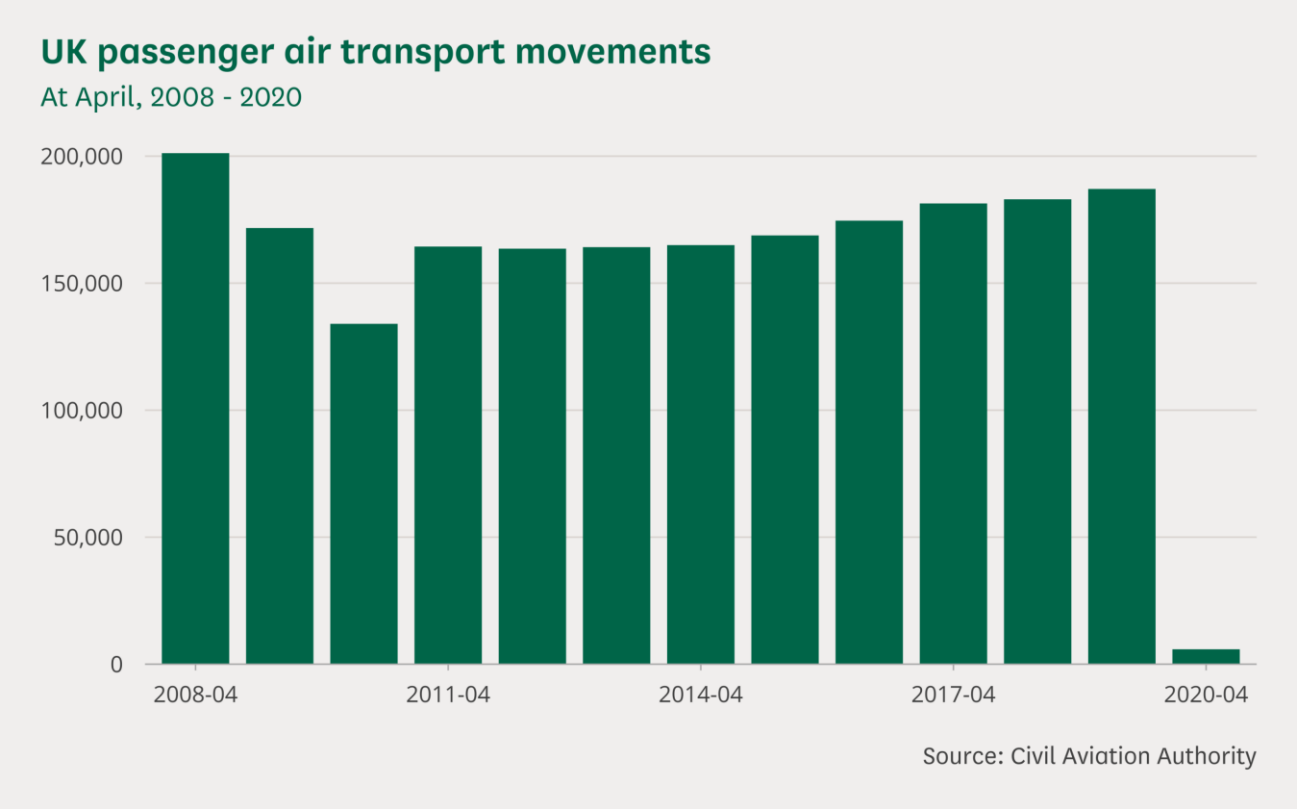
3.4.11 The development of the Stourton Park and Ride facility also includes significant provision of charging infrastructure. There is a procurement exercise in progress to appoint an operator to deliver 7kW long stay and 50kw Rapid chargers for the site to support both Park & Ride users and to provide a destination charge hub. 2 x 50kW and 12 x 7kW dual chargers are planned for when the facility opens. There is also preliminary ducting work included that will allow for the expansion of the infrastructure that will support the installation of over 100 long stay and 10 rapid chargers to be added to the site in line with increasing demand, with the addition of bus charging through provision of a 150kW supercharge install also included in plans.

3.4.12 An Alternative Fuel strategy has been drafted that outlines the role of Leeds City Council in the short to long term with regards supporting the uptake and development of alternative fuel infrastructure in the city. There is also ongoing work with the Highways and Transport service to develop an approach to further community hub charging provision for those householders without off street parking.

On street charging provision is being considered as a way to support the community hub approach; rather than committing the council to supporting the provision of individual charge points on the kerbside in front of residential properties. The focus is on supporting infrastructure that will deliver high-utilisation rates per unit rather than build expensive and expansive networks that typically provide lower utilisation, particularly as the increasing range of EV's means that charging is required less frequently.

3.4.13 **Aviation**

3.4.14 From the graph below, it is possible to see how dramatically the pandemic has impacted on air travel – reducing UK passenger air transport movements by 97%.



3.4.15 Aviation continues to be a key issue that has continued to attract a lot of attention over 2020. As the council has previously set out, it accepts that aviation growth and meeting zero carbon targets are fundamentally incompatible until such time as new technologies are developed. The council believes that aviation targets need to be set at a national and international level rather than locally, reflecting the fact that more people from Leeds fly from other airports than Leeds Bradford Airport (LBA), and that any isolated actions could lead to displacement. The council will participate in national talks to come forward with targets which address the climate emergency and the economic rebalancing of the country. As the proposals at Leeds Bradford Airport are a live planning application, the council cannot provide comment on this.

3.5 **Buildings**

3.5.1 **Planning**

3.5.2 A range of activities has taken place under the Council's statutory planning remit over the last year to support the climate emergency agenda. These are detailed below.

3.5.3 **I**mproved implementation of existing statutory policies. Firstly, through clarifications to the 2011 "Building for Tomorrow Today" and 2003 "Neighbourhoods for Living" Supplementary Planning Documents, which already provide guidance to developers for delivering quality sustainable developments. These have been refreshed on the web-site to note that the principles within them are highly relevant to help the council's declaration of a Climate Emergency, and further guidance is provided to help use the documents against an up to date planning framework. Secondly, training material has been agreed through the Climate Emergency Advisory Committee group and launched, initially for officers to re-inforce the climate, health & well-being and inclusive growth benefits of the existing planning policies, primarily around the theme of better place-making. A 2021 planning member training package will also be implemented, with specific training on trees already having been delivered.

3.5.4 Lobbying. The council responded in February 2020 to the Government's proposals for "A Future Homes Standard" and changes to Building Regulations for new dwellings. A joint letter to the Ministry for Housing Communities and Local Government was co-signed by Leeds and the remaining core cities and the Mayor of London seeking a more ambitious approach to building fabric and for local authorities to be allowed to continue setting their own standards. The council also responded to the Government's Planning White Paper in October 2020 expressing concern that the White Paper lacked clarity on the purpose of the planning system and its role in preventing and adapting to Climate Change. The council also noted that the current means of ensuring sustainable development in plans and planning decisions is in danger of being weakened by proposals around cutting environmental red tape. The council expressed concern that its declared Climate Emergency and aim to be zero carbon by 2030 may be impeded by the changes to the planning system, including national development management policies that follow the Government's aim to be zero carbon by 2050. Finally the council noted that there was a need for a focus on place-making in national policy and that a continued lack of clarity on the importance of a fabric-first approach to carbon-savings in new homes and buildings and whether local authorities will legally be able to set their own standards was impeding delivery and progression to zero carbon.

3.5.5 Local Plan Update. The council through three papers to Development Plan Panel (in July and November 2020 and January 2021) has clarified the proposed scope of the Local Plan Update, which will amend and supersede policies in the current Local Plan that focus on the climate emergency (including on Carbon Emissions and Renewable Energy, Flood Risk & Drainage, Green Infrastructure & Biodiversity, Place-making and Infrastructure). Executive Board is scheduled to agree public consultation material at its meeting in March 2021.

3.6 Domestic Energy

3.6.1 Domestic energy efficiency improvements have been challenging to deliver this year, primarily due to covid-19 restrictions, but the team has made progress on a number of key projects.

3.6.2 Government has also prioritised 'green recovery' as a way to create jobs and mitigate the impact of covid-19 on unemployment. This has been focussed on the domestic sector, with £2bn of government funding being channelled through the Green Homes Grants. £1.5bn of this is available through a voucher scheme that all residents can apply for. This had a number of teething issues and is still slow to really take off, and has been extended by a year.

3.6.3 The other £500m is available for councils to bid for through the GHG Local Authority Delivery fund. In addition, the Ministry of Communities Housing and Local Government channelled over £50m through the LEP via the Getting Building Fund. The council has been very active in securing funds from these and other sources, with the following additional funding awarded in 2020. This has only been possible due to the level of resource that the council has dedicated to working on the climate emergency.

3.6.4 £2.97m from the Green Homes Grant LA Delivery Fund phase 1A to support 385 low income homes. The project includes external wall insulation for 160 private and 20 council system built homes in 3 estates; air source heat pumps for 80 council homes; non-standard cavity wall insulation for 100 private homes and support for 25 vulnerable households referred by Home Plus Leeds.

3.6.5 £2.65m from the Getting Building Fund to provide external wall insulation, room in roof insulation, new windows, doors, heating systems and repair work for 100 private homes in Holbeck. This builds on the successful Local Growth Fund investment in the Recreations in Holbeck and is expected to deliver similar results.

3.6.6 £4.1m from the Social Housing Decarbonisation Fund demonstrator to fund innovative whole house improvements to make 190 council homes net zero carbon. The homes involved will receive super insulation to walls and roofs, high performance windows and doors and renewable technologies such as air source heat pumps and solar PV. The contractor will focus on high quality detailing to minimise cold bridging and heat loss and will be careful monitored to demonstrate the savings achieved.

3.6.7 In total, this funding is expected to create or sustain at least 150 jobs in the supply chain and safeguard a further 8 apprenticeships.

3.6.8 In addition to these three funded programmes, the council has bid for another £2.6 million of GHG LAD funding and expects to be allocated a further £4m from the regional GHG LAD funding pot. If secured, this will also be used to support major energy efficiency improvements within low income homes.

3.6.9 This will complement the £24 million of predominantly ERDF funding that is now being used to deliver energy efficiency within domestic properties. Key projects include using innovative external wall insulation on 750 council owned back to backs in priority neighbourhoods; a whole house insulation and solar PV approach to 250 council homes and a district heating clusters project which will install innovative low carbon heating solutions to 845 flats in 10 blocks.

3.6.10 In total we will improve over 5,000 low income homes that are currently the most inefficient and expensive to heat. Improvements include external and cavity wall insulation, fitting of smart technology and new heating via an air source heat pump or connection to district heating.

3.6.11 This work will not only benefit the individual occupiers who will benefit from warmer homes and lower fuel bills but it will also be invaluable in demonstrating what can be achieved via retrofit. The work will also start to normalise technologies such as heat pumps that are still quite rare across the domestic sector. The speed of roll out will need to be ramped up exponentially over the decade to meet the net zero target.

3.6.12 The council has also been involved in several industry led think tanks, including the UK Green Building Council's Accelerator Cities programme and the Green Finance Institute's Coalition for Energy Efficiency of Buildings and continues to work hard with Ministers and civil servants to ensure that our learning helps influence government policy and improves the delivery of grant schemes.

3.6.13 Over 2021 we will develop a domestic energy strategy working closely with the Climate Emergency Advisory Committee, buildings and planning working group as well as with the housing panel that is being set up as part of Leeds Climate Commission.

3.7 District Heating Network

3.7.1 The council has now completed phase 1 of the district heating network (DHN) which has been successfully providing heat to Leeds Playhouse and council houses for well over a year.

3.7.2 Covid-19 has inevitably caused delays, with Vital Energi unable to work on council house connections in Lincoln Green during spring and summer, to minimise risks to tenants and staff. However, appropriate COVID secure measures have been put in place and good progress has been made recently, with a total of c.1,150 flats now connected, including the recent change from gas to DH for the existing Stoney Rock heat network. Final completion of all 1,983 flats (with the exception of properties where access cannot be safely secured) is now expected in early 2021.

3.7.3 Phase 2 of the network was under construction throughout much of 2020, providing a connection from phase 1 in Mabgate right through the city centre and into the 'Civic Quarter' to connect five key LCC buildings: Civic Hall, Town Hall, Leeds Museum, Art Gallery/Library and St George House. Construction commenced in September 2019, working closely with the Connecting Leeds Headrow reconfiguration. Although challenging to run two separate major infrastructure projects in the same area, an effective partnership with the Connecting Leeds project has helped to minimise overall disruption to residents and businesses. COVID once again provided its own challenges, but the cancellation of many summer events – coupled with quieter roads – enabled Vital to make good progress with pipe installation. Phase 2 has now completed construction and heat is available for customers. The council now intends to remove gas boilers from the five key LCC buildings in early 2021, and replace these with DHN heat exchangers.

3.7.4 The building connections have coincided with the Public Sector Decarbonisation Scheme (PSDS) launched recently by BEIS. The council has bid for grant funding for the DH heat exchangers and plant room modifications, as well as essential work to secondary systems (controls, radiators etc) in four of the five buildings to ensure each one is suitably modernised and efficient. This application also included c£570k to connect a new school, currently under construction close to St James' hospital.

3.7.5 The team has successfully supported a potential customer to secure PSDS funding for a DH connection, with the team now agreeing commercial terms to enable a connection to take place this summer. The team has also supported a number of other potential customers to apply for PSDS funding, and it is anticipated that, if successful, these new connections will almost double current heat sales. This will also help to provide confidence in the network to other potential customers, helping to grow the network further.

3.7.6 Although positive discussions have taken place with many other customers this year, covid-19 and Brexit have caused uncertainty and delays for many sectors, so few have progressed. We expect this position to improve in 2021.

3.7.7 However, the council was recently successful in another application for grant funding from the Heat Networks Investment Project (HNIP) of c£2.4m to facilitate a 3rd phase into the South Bank, which will primarily connect into the major Aire Park scheme on the former Tetley Brewery site. This bid was helped by ongoing feasibility studies the council has commissioned, supported by the LEPs Energy Accelerator programme, with a second study now focussing on the west side of the South Bank. The ultimate ambition for the network once these branches are constructed is a wholly connected network of pipes with multiple low-carbon heat sources, providing a truly sustainable source of heat to the city.

3.7.8 Throughout the construction and development of the city's DHN, Leeds has become a national flagship for new heat networks. The profile of the city's network has been steadily rising, with the team having a growing presence in industry and government working groups as well as providing ongoing support to other local authorities looking to develop their own networks.

3.8 White Rose Forest Strategy

3.8.1 The White Rose Forest Strategy for Leeds was endorsed by Executive Board in December 2020 and aims to significantly increase tree cover from 17% to 33% across the District by 2050. This will be done in partnership with businesses, residents, institutions, communities, landowners and farmers. It will dramatically increase carbon capture and storage and by 2050 will have stored around 215,000 tonnes of carbon as well as providing greater access to woodland, supporting health and well-being and improving biodiversity.

3.8.2 The strategy provides a framework for where tree planting will take place, how it will be funded and how we will approach and engage different sectors of the community.

3.8.3 This will build on the substantial work that the council already carries out around the planting and management of trees and the commitment to plant 50 hectares trees across its own estate every year until 2050 amounting to 5.6 million trees.

3.9 Scope 3 Initiatives

3.9.1 Although we haven't measured scope 3 emissions to date, we have started to consider the key areas and actions that we can take to address these. More work will continue on this during 2021.

Food

3.9.2 A huge 25% of global emissions come from food and more than half of this comes from animal products. Meat, especially beef and lamb, has a higher carbon footprint because of the land, water, and energy used to feed and rear animals and the emissions produced by animals themselves. According to the NHS, there are also health benefits to reducing intake of red meat as it can reduce the risk of some types of cancer.

3.9.3 The pandemic has also illustrated how fragile our food supply chain can be and has increased interest locally in developing more resilient and local food supply chains.

3.9.4 In 2020 the council signed the Glasgow Food and Climate Commitment - a pledge by subnational governments to accelerate integrated food policies to help tackle climate change and a call on national governments to act. COP26 is a key opportunity for placing food and local action at the heart of the global response to the climate emergency.

3.9.5 Cllr Marshall-Katung has been appointed as the council's food champion in recognition of the importance of food, not just from an emissions perspective but also considering food in the context of health and poverty.

3.9.6 The Climate Emergency Advisory Committee's food and biodiversity working group will also be looking at supporting the development of an action plan to reduce carbon emissions from food for the city.

3.9.7 In terms of actions that have already been taken, Catering Leeds provides approximately 32,000 school meals everyday across Leeds. The service has worked with the University of Leeds to calculate the carbon emissions of the school meals produced. A comparison of the menus showed a saving of over 36% - the old menu had a total Greenhouse gas emissions of 17.5kg CO2e and the new 11.03kg CO2e, a saving of 6.47 kg CO2e.

3.9.8 As a result of the pandemic, the new menu developed for the spring term 2020 had to be put on hold and a revised emergency menu for consumption in classrooms developed. This started as a limited choice vegetarian grab bag menu but has now expanded to meet School Food Guidelines. Menus still include a non-meat day and vegetarian options daily.

3.9.9 The new menus are part of a bigger plan tackling areas such as food waste, packaging and recycling within the service. Other key actions to note:

- All suppliers are locally based in Leeds or county wide (Wakefield - West Yorkshire or Sheffield – South Yorkshire)
- Fruit and vegetable supplier uses Zero emission electric vehicles to deliver citywide
- Reduction in fresh produce packaging, recycled boxes used for deliveries
- All menus are Food for Life Bronze Served Here accredited – promote local fresh produce, working with a local butcher to supply UK farm assured / Red Tractor meat and poultry

- Supporting the provision of in season vegetables.

3.10 Waste

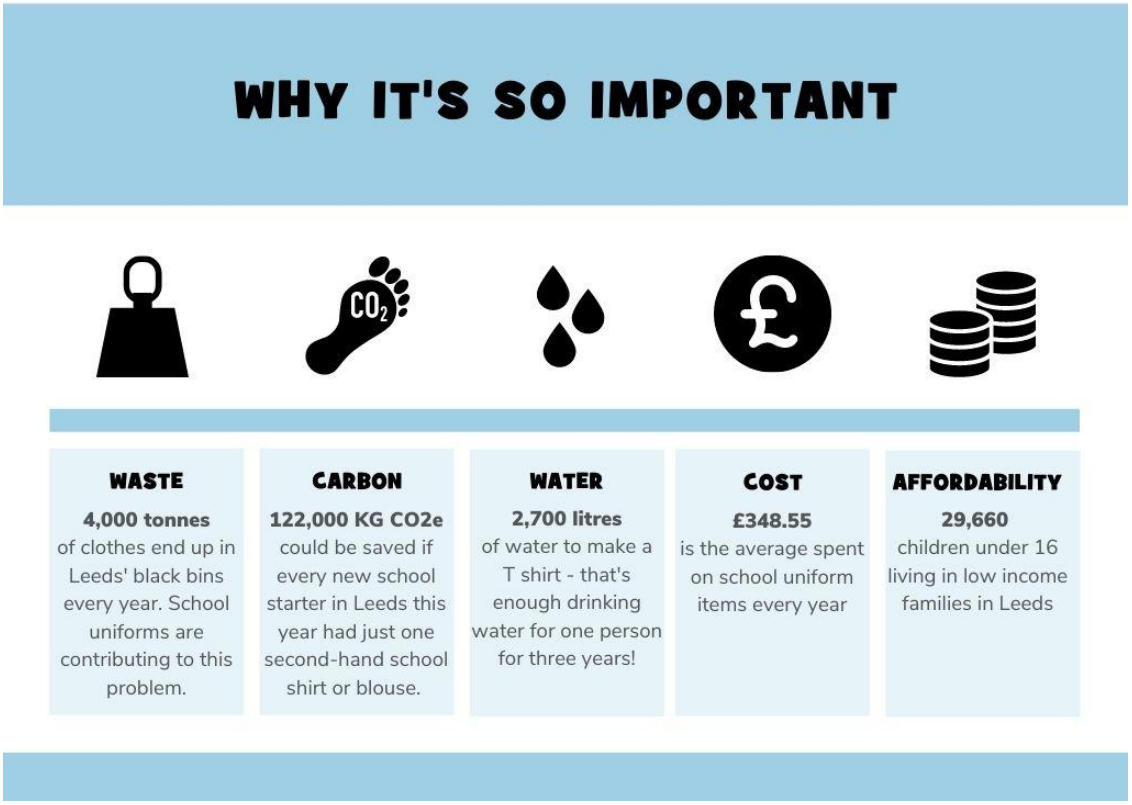
3.10.1 There has been an increase in overall waste collected over the last 12 months but the increase has been bigger for residual waste (11%) than recycling (3%). There have been a number of changes in the breakdown of recycling materials collected (see table below) - paper & cardboard and aluminium cans have increased whereas newspapers, plastics and textiles have decreased. Food trays have also increased, although this will be in part to the additional materials that only started to be accepted in green bins part way through 2019 so the figure is a comparison of a part year collection in 2019 versus a full year in 2020. The glass collection rates have also increased by 36%.

Material	2019 (t)	2020 (t)	Change from 2019 to 2020
Newspaper	7025.76	5159.64	-27%
Paper	10137.65	12155.40	20%
Cardboard	4655.61	5760.60	24%
Aluminium Cans	395.15	463.22	17%
Steel Cans	1559.60	1532.70	-2%
Mixed Carrier Bags	665.39	550.36	-17%
Clear PET	1743.64	1679.40	-4%
Natural HDPE	1083.92	858.17	-21%
Mixed Rigid Plastics	102.19	78.99	-23%
Textiles	58.76	50.83	-13%
Scrap Metal	144.48	126.42	-12%
Food trays	1327.67	1898.29	42%
Total	28899.81	30314.01	5%

3.10.2 Waste services commissioned Zero Waste Leeds to undertake behavioural change campaigns to try and get people to change habits during the pandemic, as well as helping to manage messages about how service changes due to Covid.

<u>Uniform Recycling</u>

3.10.3 Zero Waste Leeds launched a new project to make second hand school uniform the first choice in Leeds. The infographics below illustrate the importance of dealing with clothes as a source of emissions.



3.11 As part of the project the key actions undertaken were:

- Created a map of current uniform reuse projects including full details and how to access them.
- Identified gaps in uniform reuse schemes across the city, particularly in areas of deprivation.
- Produced an 'Inspiration Guide' detailing the different ways to run school uniform reuse project. Encouraging new schemes to set up by working with local organisations and parents.
- Set up a Facebook group to help people share their experiences, learn from and inspire each other to set up schemes, as well as to donate/acquire uniform.
- Continue to share the environmental impacts of school uniform and volumes of clothing currently wasted in our city via local media and on social media.

3.12 Over 90 schemes were added to the map, 12 new schemes were set up, two thirds of schools are now covered by a scheme and there is now a searchable database to enable the use of second hand uniform. There have been over 10,000 views of the map!

3.13 In just 10 weeks it is estimated that over 3000 items have been reused, saving roughly 600kg of textiles, 10,800kg of CO2e, 8.1 million litres of water and over £50,000.

3.14 The full impact report can be found here:
https://issuu.com/zerowasteleeds/docs/impact_report_-_leeds_school_uniform_exchange

3.15 Communications and Engagement

3.15.1 Following on from the Big Leeds Climate Conversation consultation, Leeds City Council approved plans to more than halve our own emissions by 2025 and has continued to raise awareness of new sustainable policies and schemes. This includes promoting the climate emergency strategy to internal and external audiences and encouraging all staff to consider the climate emergency in decision making.

3.15.2 To directly engage Leeds residents in the journey to becoming carbon neutral, the council shares regular updates, opportunities and advice through the monthly #LeedsClimate newsletter and via social media. The newsletter is shared with over 5,300 residents and the Climate Emergency and Air Quality Twitter account has almost 2,500 followers. Since the start of the year, more than 600,000 people have been reached through the dedicated Twitter account.

3.15.3 The 'Leeds by Example' website was re-launched in January to encourage sustainable behaviour change from individuals across the city. This includes tips on how people can reduce their carbon footprint through 5 key themes: travel, home, food, biodiversity, and stuff. The council also supports national campaigns, such as Clean Air Day, and is one of the founding partners—amongst TED, Global Citizen, and WWF —of the global 'Count Us In' social media campaign.

3.15.4 The 'Count Us In' campaign aims to mobilise 1 billion people to take action on climate change through six categories (transport, food, lifestyle, wildlife, voice, and home) and is measured through a global aggregator which calculates the combined carbon savings of individual actions. To support the campaign at a local level and encourage even more residents and businesses to reduce their carbon footprint, the council's Leeds by Example website will be updated in 2021 to reflect the Count Us In campaign's six themes. The new theme of 'voice' will be used to promote engaging with local councillors through the Climate Emergency Advisory Committee, having climate conversations with peers, and volunteering opportunities in the local community.

3.15.5 Since January the council has published 24 climate change and air quality related press releases to promote schemes and initiatives that will help tackle the climate emergency, including the launch of our EV Trials schemes and updates on the District Heating Network. Media coverage about Leeds schemes has been featured in local, national and international publications including CNBC, Edie, BBC News, Yorkshire Evening Post, Leeds Live and dozens of other local and specialist news outlets.

3.15.6 To engage the city and discuss the climate emergency with diverse audiences, the council held a series of in-person events including the State of the City event, attended by 170 representatives from across the council, local businesses and the third sector, and the Leeds Youth Voice Summit, which was attended by 100 secondary school pupils, earlier this year. Since the start of the COVID-19 pandemic, the council has held regular public Climate Emergency Advisory Committee meetings online. Its 'open forum' slot has given members of the public an opportunity to raise sustainability issues, present ideas or ask a question to the committee. Five public meetings have been held this year with 11 Open Forum submissions.

3.15.7 Engaging with younger residents has also been an important focus of the council's climate emergency strategy. The Leeds Youth Voice Summit was attended by 100 secondary school and college students in February and welcomed attendees to pose their climate-related questions and recommendations to senior councillors. These recommendations have informed a climate emergency toolkit for young people which will host tips and guidance on how young people can make a difference at home, at school and in their communities. The toolkit will be added to the Leeds by Example website in 2021.

3.15.8 Engaging residents on climate-related issues has been a key focus of the council. The Woodland Creation Scheme works with residents, businesses and volunteers to create new woodlands through tree planting and seed collection. As part of the scheme, the council's Parks team has also created education packs for schools to raise awareness about the benefits trees have to the environment. To engage communities across Leeds on flood risk and resilience, the Flood Risk management team has facilitated digital engagement with residents throughout the COVID-19 pandemic. This includes virtual resident meetings, newsletters, and an online consultation.

3.15.9 Where transport is concerned, Connecting Leeds has delivered a number of schemes to encourage active and sustainable travel. This includes communicating key projects such as the pop-up bike Hub at Kirkgate Market, school streets, Active Travel Neighbourhoods, working with City Connect on three new segregated cycle routes, and a trial of 'orca wands' along some of the city's busiest roads. The team has encouraged residents to have their say on transport infrastructure plans via the online Commonplace platform. Since May, there have been 24,000 contributions by over 4,500 residents to public consultation.

3.15.10 In addition to our own initiatives, Leeds City Council continues to promote and raise awareness of sustainable third sector and partner projects and initiatives. The council recently supported a successful National Lottery bid to establish community action hubs across the city and will continue to support the hubs to engage communities in tackling the climate emergency. Earlier this year, the council's Environmental Services team partnered with Zero Waste Leeds to engage residents as part of the 'Time to Recycle' campaign, which included a focus on live social media Q&A sessions. The council has also partnered with 'Green Great Systems' to offer discounted compost bins for local residents to provide more opportunities for managing food waste at home and to promote composting.

3.15.11 In addition to using communications to support many of the plans covered in this report, the council will continue to raise awareness of the climate emergency and the actions required to reduce the city's carbon footprint.

3.15.12 This year, the council's communications will place a renewed focus on promoting the co-benefits of actions to respond to the climate emergency among those not yet regularly engaged with environmental issues.

- We will deliver a comprehensive internal communications package including accredited Carbon Literacy training (delayed due to covid-19) and more resources to help every service understand how it can best support the net zero target.

- We will do more to engage residents at the hyperlocal level and support residents and organisations already leading by example to encourage peers in their community to do the same.

- We will work collaboratively with partners in the public, private and third sector to deliver a number of impactful and value-for-money campaigns that help us reach new audiences whilst reducing the carbon footprint of the city.

- Finally, we will continue to develop our owned channels—such as our newsletter, website, and Twitter account—and use these to showcase and signpost to all of the excellent work and opportunities to tackle the climate emergency taking place across the city.

3.16 Leeds Climate Commission

3.16.1 The Leeds Climate Commission have prepared an annual report which is appended to this report and has been signed off by the Commission's Strategy Group in January 2021. The annual report will be published on the Leeds Climate Commission website http://leeds.candocities.org/about-leeds-climate-commission. It covers:-

- the refreshed net-zero carbon roadmap which takes into account the recommendations from the Leeds Climate Citizens Jury which was launched on 7 January 2021 alongside other roadmaps in the Place Based Carbon Action Networks (PCAN). The roadmap provides the scientific evidence for the Council's ambition for the city to be net zero by 2030.

- the results from the Climate Action Readiness Assessment (CARA) process which maps how ready Leeds as a city is to take carbon reduction action in different economic sectors. As a city, Leeds has committed to delivering significant reductions in our carbon footprint in the next 10 years. The Commission has spent the summer assessing how ready the city is to deliver on this commitment. This will help to identify those areas where the city is ready to take/accelerate action now, and those areas where strategic interventions are needed to increase the city's readiness to act. The CARA assessment will inform the steps that the Leeds Climate Commission will take to help to deliver these interventions.

- Highlights of city-wide climate action and future plans for a Yorkshire and Humber wide Commission with a focus on climate adaptation and ensuring a 'just transition' to a low carbon economy. A top priority in the first 6 months is to prepare a regional submission to the UN climate (COP) talks that will take place in Glasgow in November 2021.

3.17 Climate Emergency Community Action Programme (CECAP)

3.17.1 This programme is a partnership of local organisations including Our Future Leeds, Leeds Tidal and Voluntary Action Leeds who were successful in securing a £2.5m award from The National Lottery's Climate Action Fund. The partnership is supported by a host of other Leeds community organisations as well as Leeds City Council. The partnership has a goal of creating a 'zero carbon, socially-just and liveable city by 2030', with the lottery funding going towards 'supercharging climate and social justice action across the city'. The project will involve setting up **16**

community hubs specifically focused on supporting ideas to tackle the climate emergency in a positive and fair way. The project will also create over **40 local jobs**, with around **£400,000 of grants** to local community groups to be shared to help them take action on climate and social justice.

3.17.2 The CECAP team have completed the first quarter mobilisation period of activities through September to December as the commencement phase of their five year programme. Within this phase recruitment to the programme structure has commenced with two-thirds of the total 40 programme staff now in place.

3.17.3 The programme is working on branding and communication planning, with the immediate next steps in the first quarter of 2021 including activities to recruit the remaining staff required. This includes transition partners in sector areas (such as energy, housing, waste), who will form and develop sector hubs for the city. As well as the sector areas, a cross cutting Climate Justice Partner is to be appointed to the programme, with ongoing support being provided by Leeds University and Leeds City Council through the Sustainable Energy and Air Quality service.

3.17.4 Initial community based work has started through Together for Peace in 4 communities; Otley, Garforth, Beeston and Seacroft. Additionally planning for what the 'city centre hub' will look like as well as seeking potential locations to facilitate engagement activities is under way. Activities in early to mid-2021 also include work on the CECAP training programme and creation of a framework for their city plan. The first CECAP climate assembly will take place in early 2021 and the first roundtable in mid-2021.

4. Corporate considerations

4.1 Consultation and engagement

4.1.1 When the climate emergency was declared in March 2019, the scale of the challenge was recognised alongside the importance of public engagement to ensure that action was taken in every part of society.

4.1.2 To support this aim of public engagement the Climate Emergency Advisory Committee was a public meeting, attracting audiences of up to 70 in the Civic Hall and when it moved on-line it received over 150 viewers on the YouTube channel.

4.1.3 Open forum was also introduced at the start of each meeting to provide members of the public an opportunity to set out their concerns, ideas or ambitions with speakers ranging from private individuals to representatives of organisations such as Our Future Leeds, GALBA and Youth Strikers.

4.1.4 In order to retain Open Forum during the pandemic, members of the public have been offered the opportunity to provide video recordings, enabling the public to still have its voice heard at virtual meetings. Digitising open forum has brought other advantages as it has enabled more people to participate as submissions can easily contain multiple people and be more creative. It also allows open forum to be more inclusive as you don't have to be free at the time of the meeting to participate.

4.1.5 One meeting was also dedicated to businesses and the Committee heard from Yorkshire Building Society, Yorkshire Design and Civic Engineers, explaining both what they had achieved to date, their future ambitions and plans as well as where they would like to see action from the council.

4.1.6 CEAC is just one strand of how we engage and communicate with the public. The council continues to promote the positive actions required to support the climate emergency through both its newsletters, social media and website as well as via press releases, presentations at conferences and events that it hosts.

4.1.7 Many other strands of work across the council also have the climate emergency at their heart such as the consultation on the Transport Strategy which began in January 2021 or the on-going engagement on the White Rose Forest Strategy.

4.2 Equality and diversity / cohesion and integration

4.2.1 A specific equality screening has not been done for this paper but many of the projects described within have their own screenings such as the White Rose Forest, District Heating or Public Sector Decarbonisation Fund. An Equality Impact Assessment will also be completed for any future projects.

4.2.2 In order to meet the net zero target for the city, it is imperative the whole city is engaged and takes action. Our communication and engagement approach uses many different channels to maximise its reach and will work closely with the Community Climate Hubs across the city as they are established as well as other third sector partners. As part of our on-going engagement we will attend the community committees once a year as well as the equality hubs.

4.2.3 The Climate Emergency Advisory Committee has also become more accessible as it has moved on line, enabling all residents to have their voice heard without the need to travel. We will explore how the benefits that this can offer for equality will be maintained post lockdown.

4.3 Council policies and the Best Council Plan

4.3.1 There are three Best City and one Best Council key performance indicators of direct relevance to this report. Performance information is reported regularly via the council's performance reporting framework and is used to inform project development and progress.

- Reduced carbon emissions across the city;
- Number of households in fuel poverty;
- Improved energy and thermal efficiency performance of houses;
- Lower CO2 emissions from council buildings and operations.

4.3.2 The Best Council Plan 2018/19 – 2020/21 maintains the council's long-term 'Best City' strategic focus on tackling poverty and inequalities through a combination of strengthening the economy and doing this in a way that is compassionate and caring, allowing us to support our most vulnerable children and adults. The projects described in this report contribute directly to the following Best City priorities:-

- Housing: The Domestic Energy Efficiency & Fuel Poverty Initiatives in the council's portfolio of cutting carbon projects improve housing quality and tackle fuel poverty in the city;

- Safe, strong communities: The Domestic Energy Efficiency & Fuel Poverty Initiatives in the council's portfolio of cutting carbon projects tackle fuel poverty in the city and help people out of financial poverty;

- Inclusive growth: The work of the Leeds Climate Commission in unlocking investment in the low carbon economy supports growth and investment, helping everyone benefit from the economy to their full potential and supports businesses and residents to improve skills,

- Health and wellbeing: The Domestic Energy Efficiency & Fuel Poverty Initiatives in the council's portfolio of cutting carbon projects reduce the likelihood of residents experiencing cold-related illnesses and the focus on active transport and ambition to reduce car usage both bring health benefits through both the physical activity and the improved air quality;

- 21st Century infrastructure: The District Heating and Corporate Energy Projects in the council's portfolio of cutting carbon projects promote the low carbon economy in the city.

Climate Emergency

4.3.3 As the Climate Emergency is at the heart of the report there is nothing further to add here.

4.4 Resources, procurement and value for money

4.4.1 In terms of capital expenditure flowing from successful applications to the Public Sector Decarbonisation Scheme (PSDS) to install renewables or energy efficiency measures in or on council buildings, since it is exclusively grant funding being sought, with no match funding requirements, there will be no capital cost implications for the council. Consultancy, management, internal staffing and reasonable enabling and ancillary works costs can also be included within applications. As regards value for money, this therefore represents a unique opportunity to accelerate the decarbonisation of the council's estate, with a series of bids having been submitted for schemes with a combined value of over £25m, and the first bid for c£3m now approved.

4.4.2 Although there will be a requirement for ongoing maintenance of the assets which will not be covered by the grant funding, the council (or individual school) will retain the expected savings in energy costs, a proportion of which will need to be ring-fenced in order to cover these costs. To do otherwise would only mean that energy savings or renewables income (as well as carbon savings) would be lost as a result of not maintaining the assets appropriately.

4.4.3 The council has also secured grant funding from the Heat Networks Investment Project (HNIP) of c£2.4m to facilitate a third phase into the South Bank.

4.4.4 In terms of domestic properties, as also noted earlier the Government is prioritising 'green recovery', focussed on this sector, with £2bn of government funding being channelled through the Green Homes Grants, plus over £50m through the LEP via

the ‘Getting Building’ Fund. The council has secured the following additional funding in 2020 for domestic energy efficiency/ decarbonisation measures:

- £2.97m from the Green Homes Grant LA Delivery Fund to support 385 low income homes;
- £2.65m from the Getting Building Fund to provide external wall insulation, room in roof insulation, new windows, doors, heating systems and repair work for 100 private homes in Holbeck.
- £4.1m from the Social Housing Decarbonisation Fund demonstrator to fund innovative whole house improvements to make 190 council homes net zero carbon.

4.4.5 The procurement strategy for the above is to use the internal provider to deliver schemes, or elements of schemes, for which it has the necessary capacity and expertise, with existing contracts and frameworks to be used for the remainder. Procurement and Commercial Services have been engaged in advising on the use of these contracts and frameworks to ensure compliance with Public Contracts Regulations and internal Contract Procedure Rules.

4.4.6 The council, in partnership with the Climate commission has secured 60,000 Euros to develop an investment portfolio, which will start to set out the opportunities for sustainable investment across the city.

4.5 Legal implications, access to information, and call-in

4.5.1 The council’s Climate Change Emergency Declaration in March 2019 and identified steps to tackle climate change are supplementary to the legally binding UK climate change target set by the Climate Change Act 2008. The actions identified in this report aim to both meet and exceed the targets set by the climate change act 2008 through the various work streams with partners/stakeholders identified in the report and alongside asking the government to make further changes to meeting the climate change objectives.

4.5.2 There are no issues concerning Access to Information Procedure Rules.

4.5.3 As a report to Executive Board, the report is eligible for Call In.

4.6 Risk management

4.6.1 Achieving net zero for the city is dependent on a number of key policy areas outside of the council’s control, for example, the decarbonisation of heat and investment in transport.

4.6.2 To achieve the vision and targets set out in this report will require significant investment beyond current programmes and we will continue to work with WYCA and call on national government for the support, powers and funding to on our ambitions.

4.6.3 Reductions have to be rapid and sharp in order to stay within the council’s carbon budget so speed of delivery if a key risk to success, especially when persuasion rather than enforcement has to be used to change behaviours.

5. Conclusions

5.1 The pandemic has had complex effects on emissions. For example it has significantly reduced emissions from the private car as traffic levels across the city dropped but it has also significantly reduced the use of public transport. Schemes such as the district heating and transport schemes have been able to progress more quickly due to the reduced traffic levels but others have been slowed down due to the impact on staffing level and/or the ability to complete works within private residences. As we start to emerge from the pandemic, we must focus on consolidating the trends that have supported such a rapid reduction in emissions such as increased home working and we must look to rebuild the economy with a focus on long term sustainability.

5.2 The council welcomes some of the recent national policy changes and funding opportunities but still recognises that these need to be much more comprehensive to enable the city to deliver on the required net zero by 2030 ambition and stay within 1.5°C temperature.

6. Recommendations

6.1 Note the intention to report on the council's scope 3 emissions in the next annual report, in line with the climate commission's proposed approach for the city

6.2 Note the intention to bring a domestic energy strategy to executive board in summer 2021

7. Background documents[1]

7.1 None

[1] The background documents listed in this section are available to download from the council's website, unless they contain confidential or exempt information. The list of background documents does not include published works.

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LEEDS CLIMATE COMMISSION ANNUAL REPORT

2020

Leeds Climate Commission Annual Report

To be published on the Leeds Climate Commission website: https://leedsclimate.org.uk

2019 ROUND UP

Leeds Climate Commission did not prepare an annual report for 2019 as we were busy joint hosting the Big Leeds Climate Conversation with Leeds City Council, much of which was reported in Leeds City Council's Executive Board Climate Emergency Update report in January 2019

http://democracy.leeds.gov.uk/ieListDocuments.aspx?CId=102&MId=9775&Ver=4

Some particular highlights from 2019 included:

- The Leeds Climate Change Citizens' Jury, organised and funded by Leeds Climate Commission working with Shared Future CIC. It was tasked with examining the Leeds' response to the emergency of climate change, and with producing recommendations that will be used to guide the future work of the Commission and a range of organisations across the city. The Jury's recommendations were presented at a public event in November. You can read about their work and recommendations here:

  https://www.leedsclimate.org.uk/leeds-climate-change-citizens-jury

- The Big Leeds Climate Conversation was launched at the Big Leeds Climate Q & A hosted by Leeds Climate Commission. You can watch the session with our 'super-panel', chaired by Polly Billington of UK100 here:

  https://www.leedsclimate.org.uk/big-leeds-climate-qa

- In July 2019 and January 2020, Leeds Climate Commission hosted seminar-style training for school leaders and governors in an event called "Caught in the Middle: Educational responsibilities, dilemmas and opportunities". This addressed the challenge of the position that schools find themselves in, caught between the valid concerns of students exercising their civil rights on the one hand, and the inadequate global political response to the challenge of climate change on the other and sought to answer the question, what is the role of schools in a climate emergency?

- Between 26 March-18 June 2019, the Commission ran four 3-hour workshops with Leeds law firm Walker Morris as part of a capacity-building programme to help organisations secure investment in energy-efficiency and low carbon projects.

PROGRESS TOWARDS NET ZERO

Based on the latest data from Dept of BEIS, Leeds' emissions fell by 40% in the period from 2000 to 2019. This equates to a year on year reduction of less than 2.7%. There has been some acceleration in the rate of decarbonisation in recent years, with emissions falling by 3.7% in 2018 and 3.9% in 2019. However, in order to get to net zero by 2030, Leeds need to deliver about 11% year on year reduction in emissions.

We estimate that Leeds' emissions fell by c13% in 2020. This reduction was largely due to the impacts of Covid-19 and the lockdown, as well as some other city-wide projects (district heating, domestic insulation) starting to have an impact. In the longer term, however, this reduction would only delay the point at which Leeds uses its share of the global carbon budget by two months.

We note that the emissions BEIS data is lagged with a delay of up to two years. We also note that it is possible that the impacts of recently adopted or initiated policies and projects may have yet to show up in the data. However, given the pre-Covid rates of decarbonisation, it is clear that a significant intensification of effort will be required to keep Leeds on track towards its target of achieving net-zero emissions by 2030. As the economy of the city is restored after the pandemic, it will be important to ensure that we embed carbon emission reduction in the recovery.

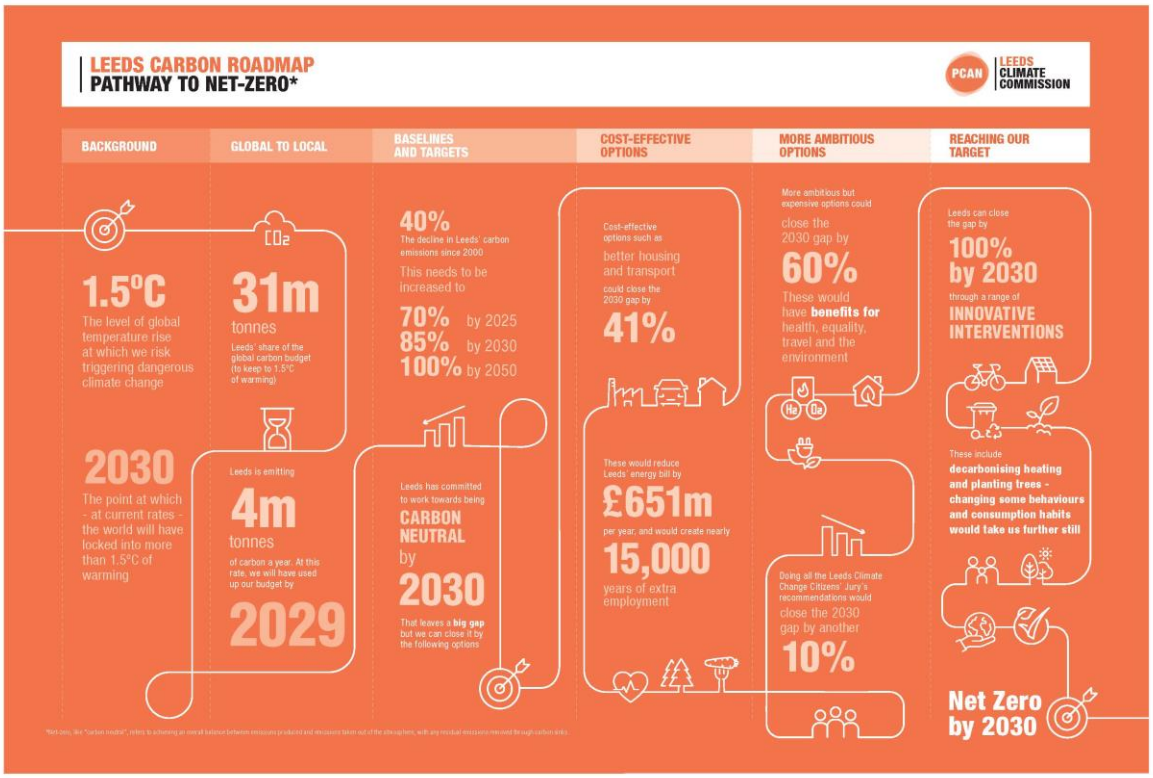
ROADMAP

In March 2019, Leeds City Council declared a climate emergency and resolved to sign up to a science based carbon reduction target consistent with achieving the Paris Agreement of no more than 1.5°C global temperature increase. It also resolved to work to make Leeds carbon neutral by 2030.

The Council tasked Leeds Climate Commission to produce a science-based roadmap for the city, which was formally presented by Professor Andy Gouldson to the Executive Board on 17 April 2019 and was used as the evidence base for the work programme set out in the January 2020 Executive Board (see above).

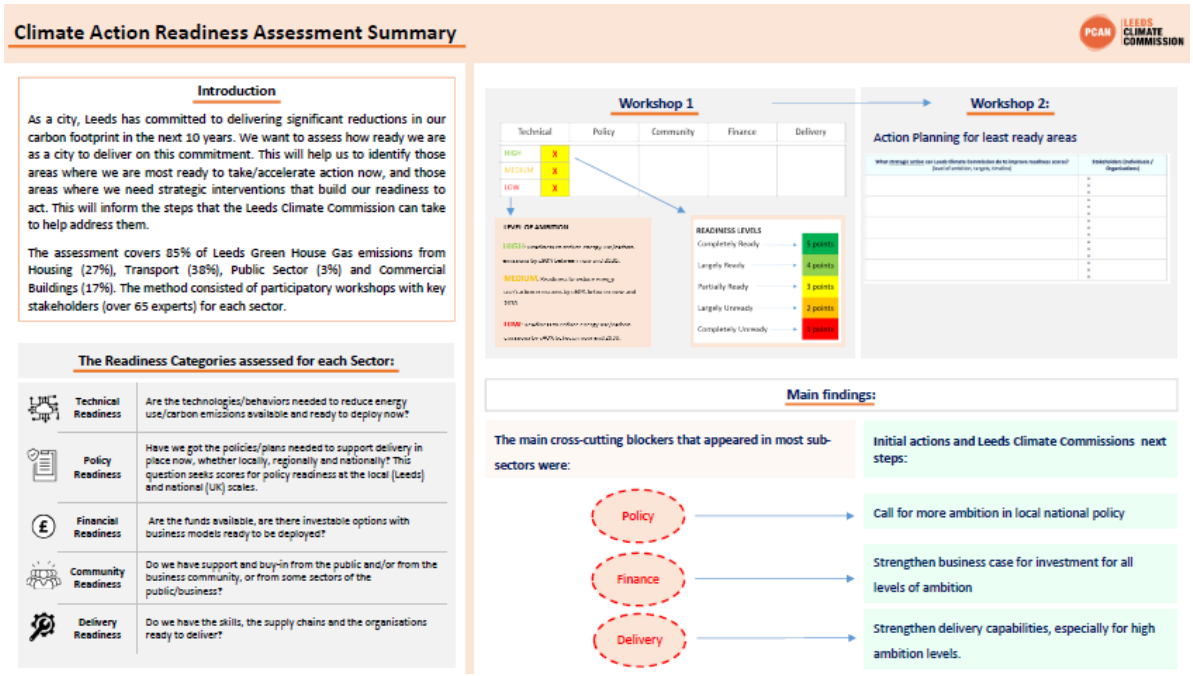
A lot has happened and so much has changed in the short period of time since then that a new version was needed. An updated version, A Net-Zero Carbon Roadmap for Leeds, was published on 7 January 2021 at a webinar, with responses from stakeholders in the public sector (Leeds City Council), private sector (Business in the Community) and civic sector (Friends of the Earth), plus members of the Leeds Climate Change Citizens' Jury.

The Net-Zero roadmap shows how, in the critical years to 2030, Leeds can radically reduce its carbon footprint while also becoming a better place, with cleaner air, improved public health and reduced poverty and inequality.
https://www.leedsclimate.org.uk/leeds-carbon-roadmap



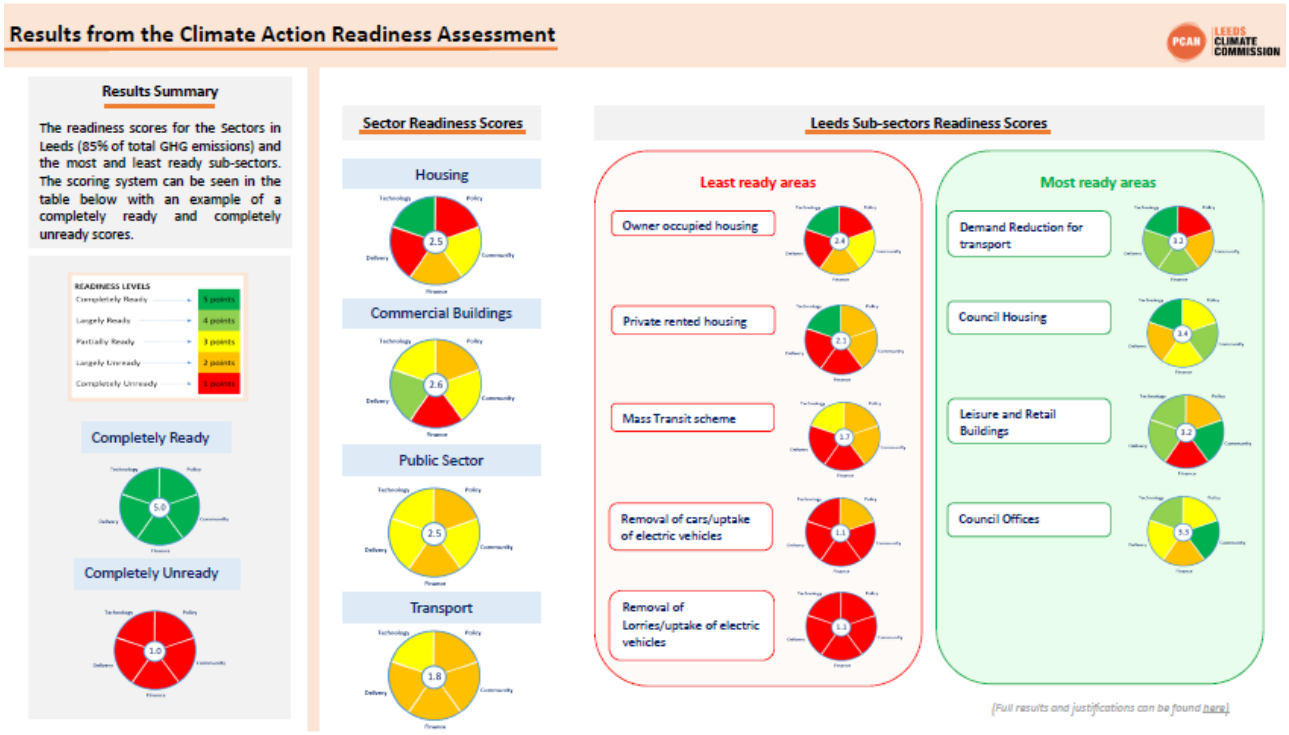
CLIMATE ACTION READINESS ASSESSMENT (CARA)

The Net-Zero roadmap shows how the city can respond to the climate challenge, but how ready is Leeds as a city to meet this challenge? Leeds Climate Commission worked through the 2020 lockdown to answer this question.



The Climate Action Readiness Assessment (CARA) process draws on participatory workshops to map how ready Leeds as a city is to take action in different sectors and to identify strategic interventions needed to build readiness. The CARA framework focuses on each sector (i.e. housing) and then on the sub-sectors (i.e. council housing) within it. For each sub-sector, and then for each sector, and ultimately for the city as a whole, it considers the technical, policy, community, financial and delivery readiness for climate action. The process scores Leeds's current level of readiness as a city across different levels of ambition ranging from low (40% carbon cuts between now and 2030), medium (60%) and high (90%).

The assessment covers 85% of Leeds greenhouse gas emissions from Housing (27%), Transport (38%), Public Sector (3%) and Commercial Buildings (17%). The method consisted of participatory workshops with key stakeholders (over 65 experts) for each.



The CARA process found that while some sectors and sub-sectors in the city were more ready to decarbonise than others, there were some recurrent issues restricting readiness, particularly relating to policy at the local, regional and national scale, and to finance. As discussed below, the Commission is focusing on these barriers in its future work plans.

The Commission is now working with SAIL (Sustainable Arts in Leeds) to apply the CARA process to Leeds' cultural sector.

Read more about the Leeds CARA process and download the presentation and summary:

https://leedsclimate.org.uk/news/climate-action-readiness-assessment-inform-new-directions-leeds-commission

LOW CARBON INVESTMENT PROSPECTUS

Leeds Climate Commission and Leeds City Council have secured 60,000 Euro funding from the European Cities Facility to support the development of a Leeds Low Carbon Investment Prospectus (LLCIP) to attract investment in the commercial/public buildings where we are most ready to act. With EUCF support, the aim is to publish a prospectus in summer of 2021.

CITY-WIDE CLIMATE ACTION

Despite the Covid lockdowns, climate-related work has continued apace across the city.

A partnership of local organisations including Our Future Leeds has been successful in a £2.5m award from The National Lottery's Climate Action Fund for a five year Leeds Climate Emergency Community Action Programme (CECAP) about ensuring that climate justice is embedded into the city's journey towards Net Zero. This will create 16 properly supported, well-connected community hubs that connect to city-wide action so that local concerns and city wide interests are properly addressed and represented in our journey to the 2030s. Leeds Climate Commission supported the Lottery application and will work with CECAP through a biannual round table, and connect up engagement and communications campaigns.

https://ourfutureleeds.org/intro-to-cecap/

Leeds Climate Commission has helped to establish SAIL (Sustainable Arts in Leeds), a network of organisations and individuals in the creative and cultural sector, who have come together to take action on the climate emergency.

https://wearesail.org/

Zero Waste Leeds is building a movement to help make Leeds a zero waste city by 2030 and Leeds By Example is bringing together examples of best practice across the city.

https://www.zerowasteleeds.org.uk/
https://www.leedsbyexample.co.uk/

Leeds City Council is leading a host of major city-wide low carbon projects and initiatives and these are summarised in the February 2021 Executive Board report http://democracy.leeds.gov.uk/ieListDocuments.aspx?CId=102&MId=9980&Ver=4

FUTURE WORK PROGRAMME

Leeds Climate Commission's main focal points will be Housing, Transport and Finance and investment. These emerged as key challenges in the CARA process – and we will establish new panels to help us to propose viable ways forward so as to improve the city's readiness in these three areas; For Commercial buildings and the Public sector, we will work with other existing networks to help do the same;

For Communications and engagement, we will retain a working group, especially to promote the wider social, economic and environmental benefits for the city as it pursues net zero by 2030.

When resources permit we also propose to commence work on considering Consumption Based (Scope 3) emissions for the city

REGIONAL COMMISSION

Our experience as the Leeds Climate Commission has shown that there is growing interest in the role that can be played by independent climate commissions that draw together key actors from key organisations in the public, private and third sectors to support an area's response to the climate challenge.

Thus far, most climate commissions or similar are emerging at the city/local levels. However, we can see a clear role for a regional commission for Yorkshire and Humber, to provide support, learn from and where appropriate coordinate/provide a strategic framework for local commissions and other local climate initiatives and to make the case for further support from national government.

Within the Yorkshire and Humber region, the Leeds Climate Commission was established in 2016, and other local commissions or similar initiatives have been/are being established/actively discussed in Bradford, Doncaster, Kirklees, Otley, Harrogate, Wakefield and York.

The main focus of these local commissions and other initiatives tends to be on the low carbon side – indeed summary low carbon roadmaps have been prepared for every authority across the region. However, climate resilience and adaptation issues are perhaps better dealt with at the catchment or regional scales.

A regional commission could therefore add most value if it placed its primary emphasis on climate resilience, whilst also coordinating and supporting low carbon activities in localities across the region.

We will be helping with the establishment of a Yorkshire and Humber Climate Commission to promote the delivery of both net-zero and climate resilient activities across the region and to ensure that activities respect the principles of a just transition to a low carbon economy. A top priority in the first six months would then to prepare a regional submission to the UN climate (COP) talks that will take place in Glasgow in November 2021.