

Colchester Borough Council Climate Action Planning

David Reilly, Lindsey Hibberd, Oliver Patrick

December 2019



Contacts

Prepared by:

Prepared for:

Lindsey Hibberd, Manager

Lindsey.Hibberd@carbontrust.com

+44(0)20 7832 4556

Oliver Patrick, Analyst

Oliver.Patrick@carbontrust.com

+44(0)20 7832 4564

Approved by:

David Reilly, Director

David.Reilly@carbontrust.com

+44(0)20 7832 4620

Emily Harrup

Transport and Sustainability Projects Officer

Emily.Harrup@Colchester.gov.uk

01206 506 476

**Colchester Borough Council Conservation &
Environmental Sustainability Task and Finish
Group**

Contents

1. Introduction
2. Executive Summary
3. Qualitative review
4. Carbon Footprint
5. Carbon Footprint for FY 2018/19
6. Emission hotspots and priority focus areas
7. Workshop
8. Recommendations & next steps
9. Appendix



1

Introduction



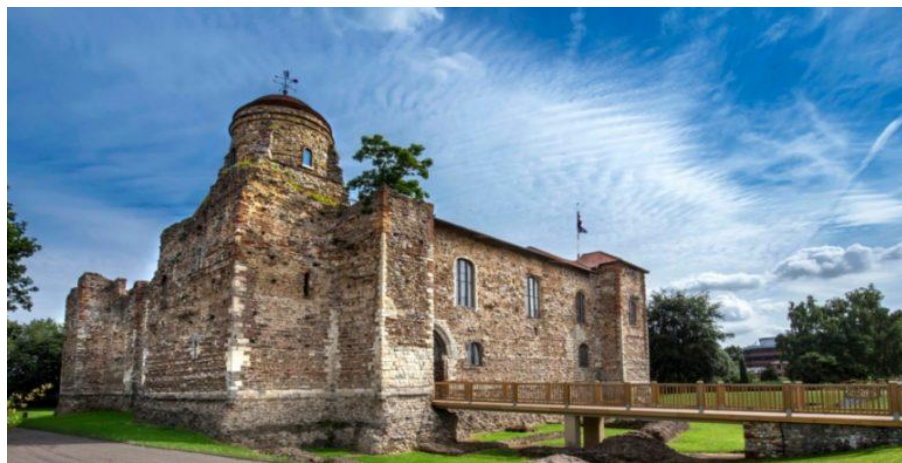
About the Carbon Trust

Our mission is to accelerate the move to a sustainable, low carbon economy.

The Carbon Trust is an independent, expert partner of leading organisations around the world, helping them contribute to and benefit from a more sustainable future through carbon reduction, resource efficiency strategies and commercialising low carbon technologies.



About Colchester Borough Council



Colchester Borough Council provides public support services across the Borough including housing, waste management, transportation, communities, well-being, public safety and environmental services.

The council recognises the environmental impact of its activities and has made significant progress in the reduction of carbon emissions over the last 10 years supported by investment and strategic action to tackle its direct carbon emission sources.

- Colchester Borough Council (CBC) declared a climate emergency in July 2019. One key aspect of the climate emergency declaration was the intention to become a **carbon neutral organisation by 2030**.
- The declaration builds on a **strong heritage of climate action in the borough** - CBC has set two previous carbon reduction targets through their Local Authority Carbon Management Plans.
- The Carbon Trust was commissioned by the Council to perform a **footprinting and scoping exercise** to inform an action plan setting out goals to address the target(s) out to 2030. In particular:
 - Undertake a qualitative review of the interaction between the Carbon Neutral target and other Council strategies
 - Provide analysis / insight on carbon reduction progress to date
 - Develop a revised carbon footprint (2018/19)
 - Undertake a workshop with Officers and Councillors to present results and identify & shape priorities going forward
- This report consolidates the results of the above activities and provides recommendations on future scope, targets and roadmap



2

Executive Summary

1. Key Findings

- Colchester Borough Council (CBC) has achieved impressive carbon reductions over the past decade & continues to view **climate action as a key strategic priority**.
- The Council has set a 2030 Carbon Neutral target which, whilst very ambitious, is in alignment with other Local Authorities who have declared a Climate Emergency.
- CBC's measured footprint for the FY 2018/19 was **6,180 tCO₂e**.
 - The Council's **gas consumption** for space and water heating in buildings is the largest emission source [47%]
 - **Leisure World** is the largest single emitter across the Council's portfolio and accounts for 35.3% of all emissions
- An error was found in how CBC have historically accounted for emissions from their fleet, resulting in an annual underreporting of ~1,300 tCO₂e over the past five years.
 - Historical fleet emissions were recalculated to reflect the use of diesel fuel rather than biofuel
- Relative to a 2008/09 baseline, CBC has achieved a **40.8% decrease in CO₂e emissions** and has reached the 40% emission reduction target set out in the 2016-2020 LACM Plan a year early.

2. Recommendations

Five recommendations are made to the Council:

1. Collect available data and measure relevant Scope 3 emissions

- Before deciding on whether or not to expand the scope of the emissions target, the Council should quantify and understand the emission sources which the Council has some influence over.

2. Perform pathway modelling to identify priority focus areas for the Council

- The Council should understand the impact of business as usual, national policies and local initiatives on the future carbon footprint to understand how their emissions will look in 2030. We would consider this to be a vital step in shaping a carbon neutral road map and action plan.

3. Write and agree an internal data management plan

- Sets out roles and responsibilities for data capture and verification as well as a timetable for reporting to agree a formal process for monitoring against the target.

4. Create an engagement plan

- Establish a plan to continue engaging internally and throughout the Borough on the Climate Emergency with a range of stakeholders.

5. Ensure ethos of the Climate Emergency is embedded in broader strategies

- Engage broader strategy makers to ensure the Climate Emergency is a key feature of strategy revisions.

3

Qualitative review

Understanding CBC's portfolio of strategies and their relationship to the carbon neutral target

CBC's Carbon management planning to date

- Colchester Borough Council has actively engaged in monitoring and reporting carbon emissions from buildings and transport for more than 10 years.
- A number of carbon reduction strategies and action plans have been developed and implemented since 2008, as set out below.
- Progress against each plan has been analysed as part of this project and is presented later in the report.

Year	Document	Target
2008	LACM Plan 2008 - 2012	25% carbon reduction by 2012 (2008 baseline)
2015	LACM Plan 2016 - 2020	40% carbon reduction by 2020 (2008 baseline)
2019	Climate Emergency Declaration	Carbon Neutral by 2030

Comparison to other Councils

- ~ 65% of District, County, Unitary, Metropolitan & Combined Authorities have declared a climate emergency (265/408, Oct 2019)
- Majority of Council's have set a 2030 target, with a mix of targeting the Council's own estate or the wider district

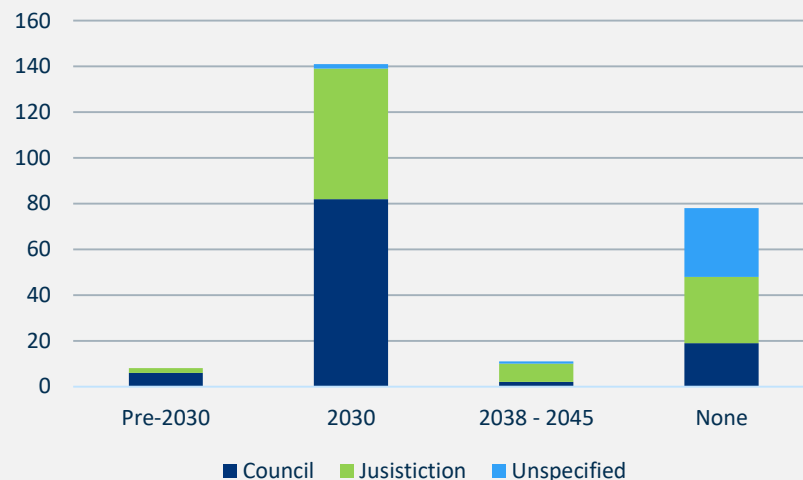
Examples of Concerns

- Not on track for limiting global warming to 1.5°C
- Loss of habitat
- Significant risk from flooding, drought and rising sea levels
- Impact on air quality, e.g. through heating, traffic

Examples of Commitments

- Increase energy efficiency in buildings
- Deploy renewable energy
- Achieve high recycling rates
- Inspire and promote activities throughout the local community

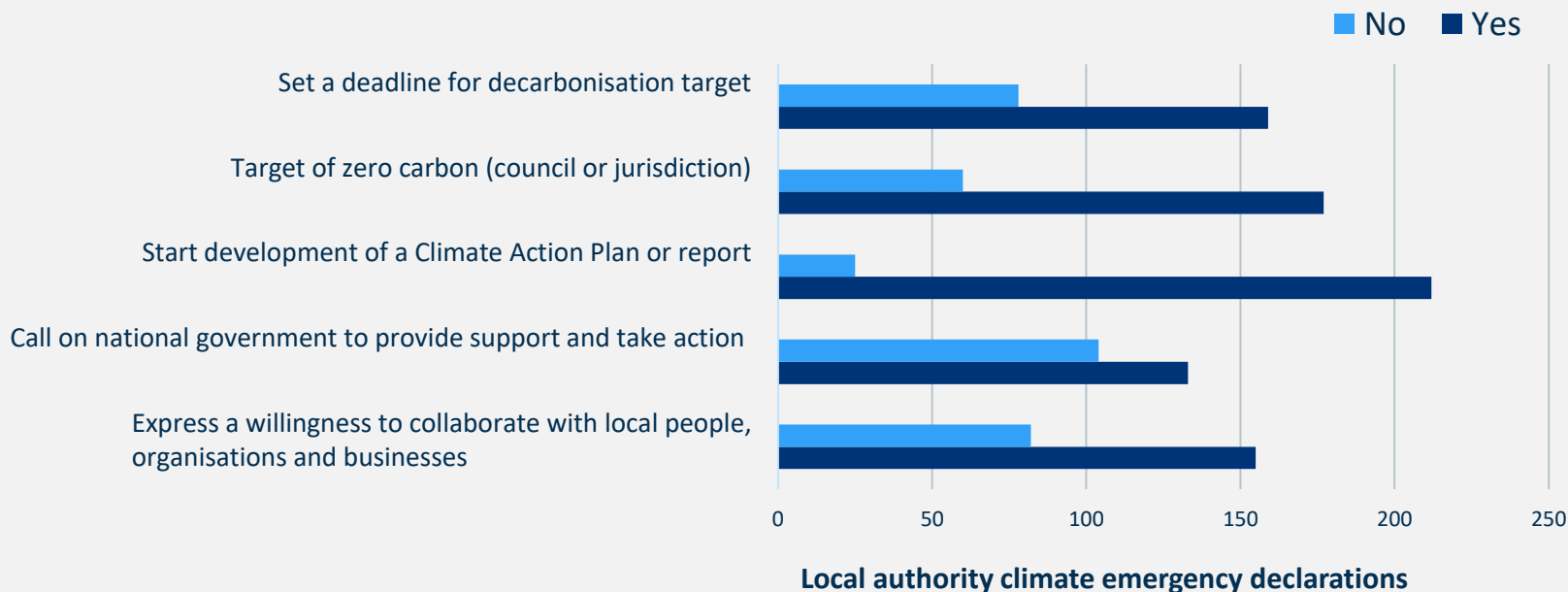
No. of declarations



Above. Summary of Climate Emergency deadlines & scope of 237 declarations of climate emergency (analysed by Igov, Sept 2019)

Climate Emergency Declarations

The following graph compares **common features of 237 Local Authority Climate Emergency Declarations**, based on analysis of the written declarations



Qualitative review of broader strategies

- In order to understand the broader Council context for the climate emergency declaration, the Carbon Trust has undertaken a review of all key active strategies and plans.
- The following slides show the relevance for each Strategy in relation to the Council's Scope 1, 2 and 3 footprint (further defined on slide 21) and in relation to carbon emissions in the broader Borough.
- The relevance rating has been colour coded as:
 - Green = very relevant
 - Orange = somewhat relevant
 - Blank = not relevant
- The analysis is intended to highlight the interaction between the Council's 2030 carbon neutral target and other active strategies and plans and recommend areas for future consideration.

Qualitative review (continued)

Strategy	Time period	Relevance to Colchester Borough Council Scope 1 & 2 emissions	Relevance to Colchester Borough Council Scope 3 emissions	Relevance to climate considerations in the broader Borough
Our Colchester - The Strategic Plan	2018 - 2021	<ul style="list-style-type: none"> Direct mention of Council's emission reduction targets. 		<ul style="list-style-type: none"> Initiatives around pollution and improving energy efficiency of the private rented sector
Colchester Economic Development Strategy	2015 - 2021		<ul style="list-style-type: none"> Infrastructure projects including: A120, A12 Upgrading Great Eastern Mainline and improving public transport links. Superfast broadband. 	<ul style="list-style-type: none"> Deliver STEM projects to school and college students & young people not in education, employment of training (NEET) and a STEM Centre in Colchester Strategic employment zones: Colchester Northern Gateway, Stanway and University of Essex Knowledge Gateway.
Environmental Sustainability Strategy (2016 update)	2015 - 2020	<ul style="list-style-type: none"> Close links to 2008 LACM target (to reduce carbon emissions in Council buildings by 25% by the year 2012). Internal Environmental Sustainability awareness programme 	<ul style="list-style-type: none"> Embed green procurement 	<ul style="list-style-type: none"> 2010 Climate Change Risk Assessment Community Leadership on emissions reductions Opportunities to develop low carbon private sector housing.
Emerging Local Plan	Emerging 2017 – 2033			<ul style="list-style-type: none"> Local Plan policies and development decisions will impact on the carbon emissions of the Borough
Colchester Borough Council – Asset Management Strategy	2016 – 2021	<ul style="list-style-type: none"> Direct links to Operational and Community Asset Management strategies of: EPC report, Local Authority Carbon Management Plan and Housing Investment programme. Housing Development Strategy 	<ul style="list-style-type: none"> Revolving Investment Fund Strategic Land Purchases 	<ul style="list-style-type: none"> Garden communities strategy Economic Growth Strategy Employment Land Study, Colchester Ultra Ready for Business
Community Enabling Strategy	2015 onwards			<ul style="list-style-type: none"> Community tree warden scheme BIG Garden, High Woods Country Park

Qualitative review (continued)

Strategy	Time period	Relevance to Colchester Borough Council Scope 1 & 2 emissions	Relevance to Colchester Borough Council Scope 3 emissions	Relevance to climate considerations in the broader Borough
Connecting Colchester - Our Digital Strategy	2017 - 2022		<ul style="list-style-type: none"> Could relate to Council broadband contracts 	<ul style="list-style-type: none"> Will enable Colchester to help plan better for its growing population, and the challenges of traffic congestion, protecting air quality and helping ensure technological innovation does not come at the expense of the Borough's high quality of life and environment.
Efficiency Statement	2016 onwards	<ul style="list-style-type: none"> The projects identified by the Local Authority Carbon Management Plan will reduce future energy costs 		
CBC Housing Strategy (and 2018/19 Progress report)	2015 – 2020	<ul style="list-style-type: none"> Improving energy efficiency of the Council's housing stock. Average SAP rating of CBC's housing (73.86) exceeded target set for 2019. Work continues to complete loft and cavity wall fill within the stock with access issues hampering full stock completion. Ground Source Heat Pump installed in Harrison Court to provide heating and hot water, replacing previous ageing gas boilers. 45% of the Council Housing Stock now with Photo Voltaic panels. 		<ul style="list-style-type: none"> Standards and energy efficiency measures that the Council are setting for the wider Borough
Housing Asset Management Strategy	2018 – 2022		<ul style="list-style-type: none"> Objective 7: Can be heated efficiently and cost effectively (whilst reducing environmental impact). Performance measurements include SAP and estimated CO2 emissions. 	

Qualitative review (continued)

- Based on our review of current strategies and action plans, it is apparent that climate action touches many parts of the Council's core activities.
- Key findings of the analysis:
 - Most of the current strategies expire in 2020. When these are revised it is important that the **Climate Emergency ethos and targets are a key feature of the new strategies.**
 - The Climate Emergency targets should **build on the current Environmental Sustainability Strategy**, which has a Strategic Priority to reduce the impact of the Council's Buildings, Services and Operations. The Council should continue to work with the broader community to understand the most impactful strategic priorities for them to 2030.
 - It will be important that the **Climate Emergency is central to the updated Strategic Plan** and that all policies are assessed in light of their contribution to the emissions reductions target.
 - The Economic Development Strategy, Environmental Sustainability Strategy, Asset Management Strategy, Digital Strategy and Housing Asset Management Strategy could all link to the Council's Scope 3 emissions. Therefore, if the Council chooses to include Scope 3, consideration would need to be given to the impact of these strategies on the reduction of these emissions.
 - With a continuing need for Council efficiencies, it is important to continue to monitor (as per the Council's Efficiency Statement), and quantify where possible, any cost savings associated with energy efficiency and carbon reduction measures, to demonstrate broader benefits.



4

Carbon Footprint

Introduction to Greenhouse Gases (GHGs)

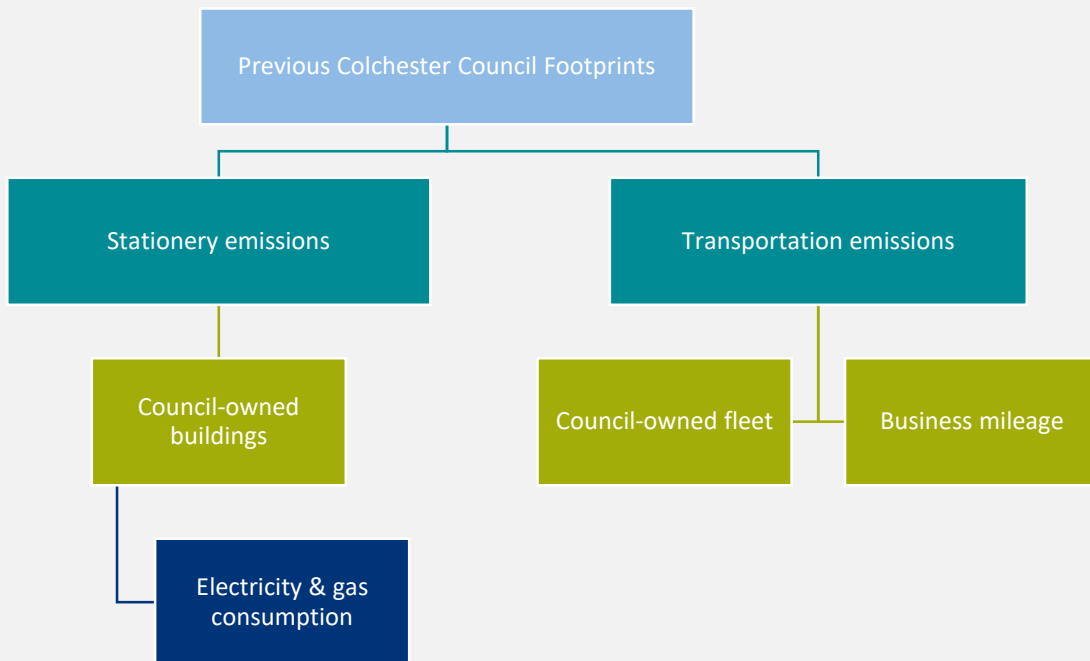
- Greenhouse gases (GHGs) are gases in Earth's atmosphere that trap heat. They let sunlight pass through the atmosphere, but they prevent the heat that the sunlight brings from leaving the atmosphere.
- **Carbon dioxide is not the only greenhouse gas**, there are five other key greenhouse gases that contribute to global warming: Methane, Nitrous Oxide, Hydrofluorocarbons, Perfluorocarbons and Sulphur Hexafluoride.
- Not all of these gases arise from combustion of fossil fuels, with some originating from refrigeration/cooling, agriculture, chemical production and electrical applications.
- **Under the GHG Protocol (see next slide), each gas has its own global warming potential (GWP).** By comparing each gas's GWP to that of Carbon Dioxide (CO₂) we are able to derive a **Carbon Dioxide equivalent value (CO₂e).**
 - Example: CO₂ has a GWP of 1, Methane has a GWP of 24; therefore we can say that 1 ton of methane emissions is equal to 24tCO₂e.
- **Values presented in this report will be given in CO₂e** and therefore reflect the emissions resulting from all greenhouse gases.
- Although CO₂ has the lowest GWP, with some other GHGs having a GWP thousands of times higher, it is by far the most abundant GHG and is therefore the focus when discussing emissions reduction and climate change.

GHG Protocol and emission scopes

- The **greenhouse gas (GHG) protocol** is the most widely used and accepted methodology for GHG accounting. It has been followed to calculate CBC's footprint for FY 18/19.
- Under the GHG Protocol, emission sources are divided into **scopes 1, 2, and 3**. Scopes 1 and 2 emissions are a result of an organisations' **direct** operations, whereas scope 3 emissions result from an organisations' **indirect** activities or value chain (for example, from the manufacturing of products used by the Council).
- Scope 3 emissions are emitted by a third-party's operations and are generally **more difficult to monitor, control and reduce**. As a result, public (and private) sector carbon action has traditionally focused on scope 1 and 2 emissions.
- Where scope 3 emissions have been included, organisations have tended to only consider select elements. However, there is now **increasing appetite to include more scope 3 emissions** in footprints and to encourage carbon reduction in an organisations' value chain.



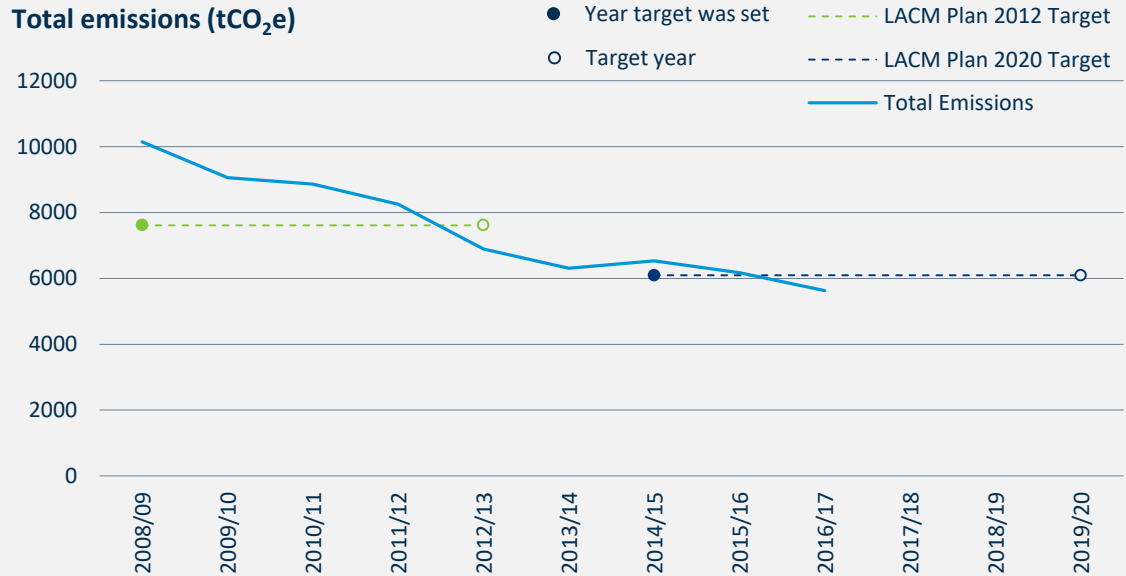
Above. Emissions scopes according to the GHG protocol



- In all previous footprints, CBC have included elements of their stationary emissions and transportation emissions. This has typically included:
- **Scope 1 elements:**
 - Gas consumption, typically used for space and water heating in buildings
 - Fuel consumption used to power the Council's fleet
- **Scope 2 elements:**
 - Electricity consumption
- **Scope 3 elements:**
 - Emissions resulting from business travel in non-Council operated vehicles

- **Analysis of CBC's historic GHG emissions** was carried out using annual GHG emissions reports. Data was available from 2008/09 up to 2016/17.
- Through a number of previous Carbon Management plans, CBC has been working towards **emission reduction targets for the past decade.**
- The emission reductions reported in the GHG reports indicate that **CBC has achieved their reduction targets.**
- The majority of emission reductions were attributed **to purchased electricity and the Council's fleet.**
- During the Carbon Trust analysis, an **accounting error** was found in the method for calculating GHG emissions from the Council's fleet.

Total emissions (tCO₂e)



Above: CBC's evolving footprint as per annual GHG emissions reports

Historical Emissions

Below. CBC's historic emissions as per the annual GHG reports

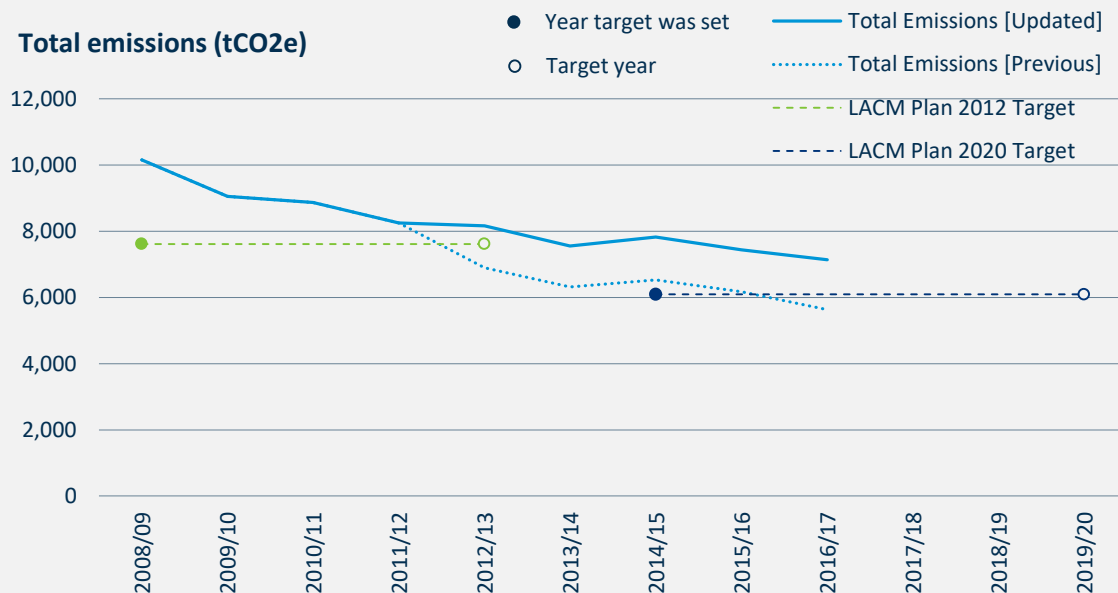
GHG emissions data – Total Tonnes of CO ₂ e										
		FY 16/17	FY 15/16	FY 14/15	FY 13/14	FY 12/13	FY 11/12	FY 10/11	FY 09/10	FY 08/09
Gas Consumption		2,918	3,012	2,993	2,915	3,231	2,642	3,048		
Owned Transport		83	86	169	124	130	1,173	1,157	4,473	5,285
Scope 1 Total		3,001	3,098	3,162	3,039	3,361	3,815	4,205	4,473	5,285
Purchased electricity		2,583	3,036	3,326	3,224	3,484	4,390	4,603	4,516	4,798
Scope 2 Total		2,583	3,036	3,326	3,224	3,484	4,390	4,603	4,516	4,798
Business Travel		47	41	45	49	50	48	58	65	67
Scope 3 Total		47	41	45	49	50	48	58	65	67
Total emissions		5,631	6,175	6,533	6,312	6,895	8,253	8,866	9,054	10,150
% decrease from baseline		44.5%	39.2%	35.6%	37.8%	32.1%	18.7%	12.7%	10.8%	-

Fleet emissions

- It was found that **emissions from the Council's fleet had been under-reported since 2012** as a result of the Council assigning the majority of their **fuel consumption to biofuel** when calculating emissions.
- It was confirmed that the Council's fleet has always been powered by a combination of diesel and gas oil.
- The calculation resulted in a **~1,300 tCO₂e** annual reduction in emissions (in error) since 2012.
- Since this error has been uncovered, historical fleet emissions have now been adjusted to allow for an accurate comparison in historic emissions, and are shown in the next slide.

Historical Emissions [ADJUSTED]

- The adjusted value does have a material impact on the Council's GHG reporting
- However, the Council are still on track to meet the 40% reduction set out in the LACM Plan 2016-2020
- As of FY 16/17, the Council had achieved a **29.7%** reduction in emissions from the 2008 baseline year
- **The updated emissions pathway will be used from herein**



Above: CBC's adjusted footprint reflecting an increase in emissions from the Council's fleet

Historical Emissions [ADJUSTED]

Below. CBC's historic emissions with adjusted 'owned transport' emissions.

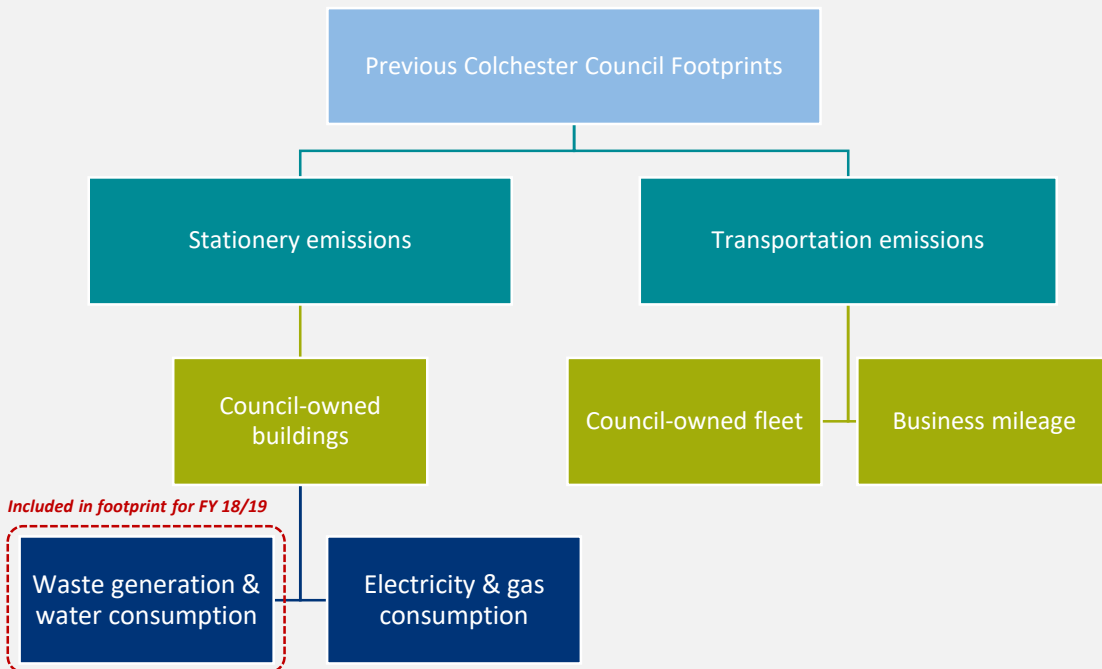
GHG emissions data – Total Tonnes of CO ₂ e										
		FY 16/17	FY 15/16	FY 14/15	FY 13/14	FY 12/13	FY 11/12	FY 10/11	FY 09/10	FY 08/09
Gas Consumption		2,918	3,012	2,993	2,915	3,231	2,642	3,048		
Owned Transport		1,589	1,350	1,461	1,363	1,395	1,173	1,157	4,473	5,285
Scope 1 Total		4,507	4,362	4,454	4,278	4,626	3,815	4,205	4,473	5,285
Purchased electricity		2,583	3,036	3,326	3,224	3,484	4,390	4,603	4,516	4,798
Scope 2 Total		2,583	3,036	3,326	3,224	3,484	4,390	4,603	4,516	4,798
Business Travel		47	41	45	49	50	48	58	65	67
Scope 3 Total		47	41	45	49	50	48	58	65	67
Total emissions		7,137	7,439	7,825	7,551	8,160	8,253	8,866	9,054	10,150
% decrease from '08		29.7%	26.7%	22.9%	25.6%	19.6%	18.7%	12.7%	10.8%	-



5

Carbon Footprint for FY 18/19

Footprint Scope for FY 18/19



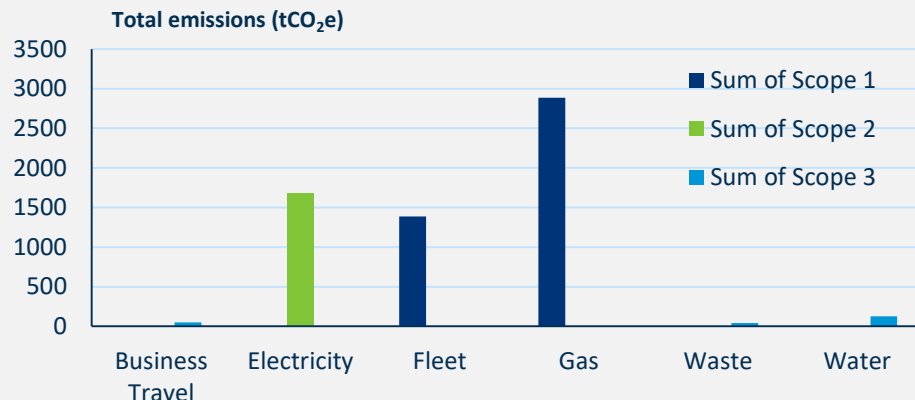
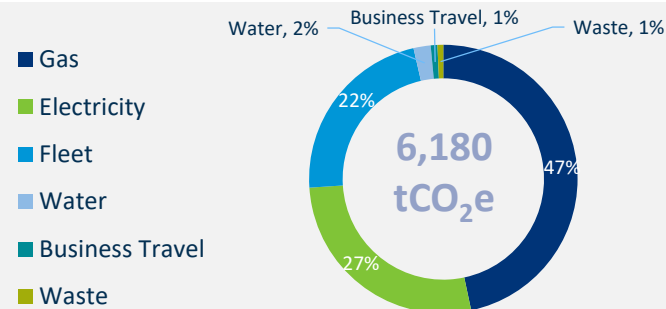
- CBC's carbon footprint was recalculated for the FY 18/19.
- In consultation with the Council, the scope of the footprint was expanded to include:
 - Emissions from the third-party disposal and treatment of waste generated in Council-controlled operations (scope 3).
 - Emissions resulting from the supply and subsequent treatment of water consumed by the Council's operations (scope 3).

N.B. Renewable generation was initially included in CBC's footprint but was removed during the QA process. Renewable generation is not considered to offset emissions in the location-based method used by the GHG protocol and is accounted for by either a) reducing meter readings if the electricity generated is private wired to a building or b) in the national grid emissions factor if the electricity is exported to the grid.

2018/19 Carbon Footprint

- The total carbon footprint for Colchester Borough Council's own operations in the FY 2018/19 is equal to **6,180 tCO₂e**.
- The majority of this footprint is attributed to the Council's gas consumption for space and water heating in buildings. Emissions from electricity consumption and fuel consumption for vehicles also form a significant portion of emissions.

	Emissions [tCO ₂ e]
Scope 1	4,271 (69.1 %)
Scope 2	1,687 (27.3 %)
Scope 3	220 (3.6 %)



2018/19 Carbon Footprint

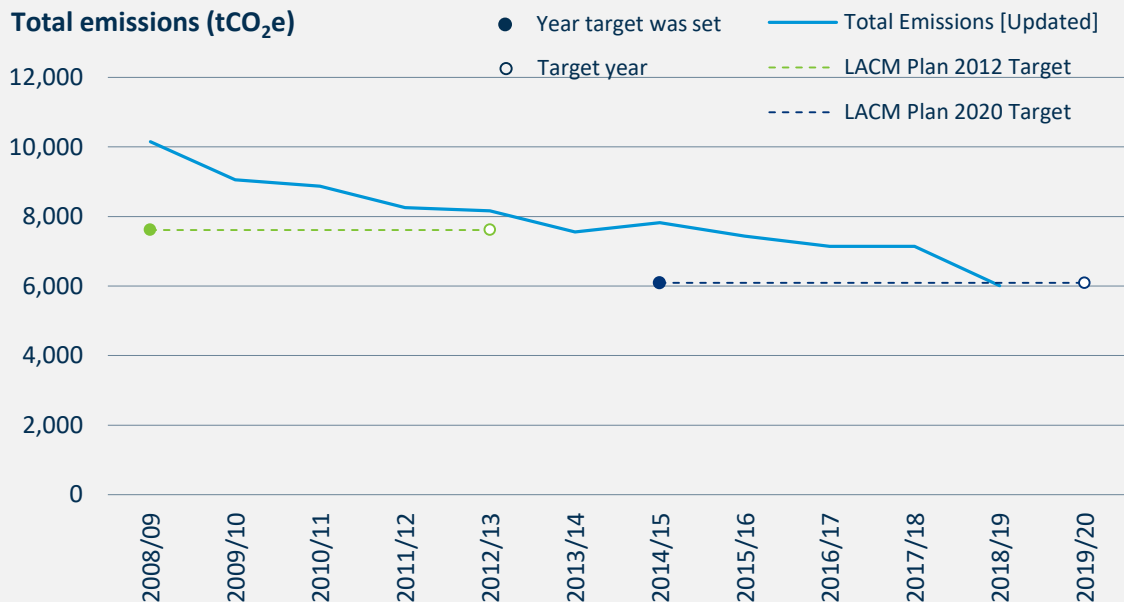
Below. CBC's historic emissions, updated with FY 18/19.

GHG emissions data – Total Tonnes of CO ₂ e										
	FY 18/19	FY 16/17	FY 15/16	FY 14/15	FY 13/14	FY 12/13	FY 11/12	FY 10/11	FY 09/10	FY 08/09
Gas Consumption	2,884	2,918	3,012	2,993	2,915	3,231	2,642	3,048	4,473	5,285
Owned Transport	1,383	1,589	1,350	1,461	1,363	1,395	1,173	1,157		
Scope 1 Total	4,272	4,507	4,362	4,454	4,278	4,626	3,815	4,205	4,473	5,285
Purchased electricity	1,687	2,583	3,036	3,326	3,224	3,484	4,390	4,603	4,516	4,798
Scope 2 Total	1,687	2,583	3,036	3,326	3,224	3,484	4,390	4,603	4,516	4,798
Business Travel	50	47	41	45	49	50	48	58	65	67
Waste ¹	43	-	-	-	-	-	-	-	-	-
Water ¹	127	-	-	-	-	-	-	-	-	-
Scope 3 Total	221	47	41	45	49	50	48	58	65	67
Total emissions	6,180	7,137	7,439	7,825	7,551	8,160	8,253	8,866	9,054	10,150

¹ Emission sources not included in CBC's footprint measurement up to FY 18/19

2018/19 Carbon Footprint

- The baseline year 2008/09 and LACM Plan targets did not include the emissions resulting from waste and water
- Excluding these emission sources, CBC's footprint is equal to **6,009 tCO₂e**
- This represents a **40.8% decrease** in emissions relative to 2008/09, and has resulted in CBC meeting their 40% emission reduction target a year early.



Above: CBC's evolving footprint. Footprint for FY 18/19 does not include water & waste to allow for direct comparison with previous years. No data for 2017/18 was available and it was assumed constant from 2016/17

6

Emission hotspots and priority focus areas

2018/2019 Footprint Breakdown

- The Council's '**stationary**' footprint from buildings, public lighting/amenities etc. accounts for **76.7%** of the overall footprint:
 - The stationary footprint was divided into use-types. **Leisure and recreation is by far the largest contributor to the Council's stationary emissions**, largely driven by Leisure World
- The emissions associated with the Council's fleet are also substantial:
 - As the grid continues to decarbonise and purchased electricity becomes 'greener' **emissions from the Council's fleet will become an increasingly larger portion** of the overall footprint

STATIONARY FOOTPRINT		
Ranking	Site Type	Emissions (tCO ₂ e)
1	Leisure and recreation	2,388
1.a	Leisure World	2,184
2	Residential buildings	1,419
3	Council buildings	376
4	Public conveniences	286
5	Cemetery / Crem	191
6	Street amenities	79
7	Pumping stations	3
TOTAL		4,742

TRANSPORTATION FOOTPRINT		
Ranking	Site Type	Emissions (tCO ₂ e)
1	Fleet Vehicles	1,388
1.a	Waste vehicles	819
1.b	Other vehicles	569
2	Business Travel	50
TOTAL		1,438

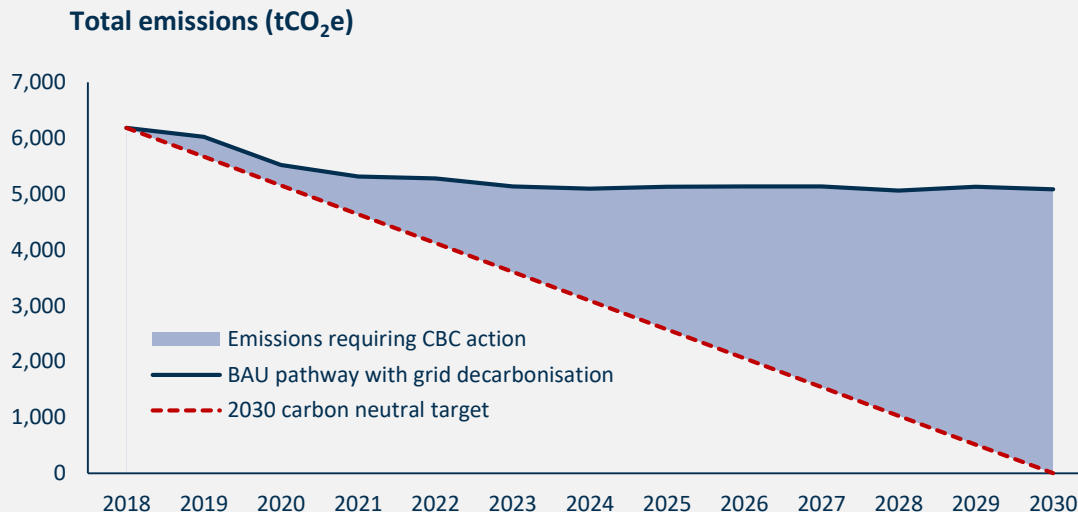
Stationary Breakdown

- Gas emissions, primarily from the space and water heating of buildings, make up the majority of the Council's stationary emissions (60.8%)
- Leisure world is the largest single emitter across the Council's portfolio and accounts for 35.3% of all emissions.
- Future reduction in gas emissions will need to be largely driven by Council-led interventions as national trends between now and 2030 will not impact gas emissions as much as other emission sources e.g. electricity consumption.

STATIONARY FOOTPRINT						
Ranking	Site Type	Electricity emissions (tCO ₂ e)	Gas emissions (tCO ₂ e)	Water emissions (tCO ₂ e)	Waste emissions (tCO ₂ e)	TOTAL
1	Leisure and recreation	762	1,511	82	33	2,388
1.a	Leisure World	656	1,445	58	25	2,184
2	Residential buildings	467	928	25	0	1,419
3	Council buildings	148	209	10	9	376
4	Public conveniences	207	72	7	0	286
5	Cemetery / Crem	23	165	2	1	191
6	Street amenities	78	0	1	0	79
7	Pumping stations	3	0	0	0	3
TOTAL		1,687	2,884	127	43	4,742

Decarbonisation of the grid

- Maintaining a business as usual (BAU) case, where energy consumption remains constant will still result in a **decrease in electricity emissions as a result of grid decarbonisation.**
- In a 'do nothing' scenario, CBC's emissions are **expected to reduce by 1,094 tCO₂e** as a result of CBC using greener electricity from the national grid.
- Beyond this, a further 5,085 tCO₂e reduction must then be achieved by CBC to achieve the 2030 carbon neutral target.



Above: BAU pathway for Colchester assuming a 'do-nothing' scenario whereby emission reductions come from the grid decarbonising.



7

Workshop

Workshop delivery

- Two workshop sessions were led by the Carbon Trust - one with a selection of Council officers and another with members of the Task and Finish Group who are overseeing the implementation of the Climate Emergency Declaration.
- Representatives from Colchester Borough Homes and Colchester Amphora (both wholly-owned subsidiaries of the Council) also attended the officers session
- The aims of the session were to:
 - Present interim results
 - Explore the idea of expanding the scope of CBC's target
 - Give consideration to other aspects of climate action planning (e.g. pathway modelling, science-based targets, approach to offsetting etc.)
 - Discuss potential next steps for the Council

Workshop delivery

- The workshops were used to present the interim results of CBC's updated footprint and to display what other Council's are doing in respect to Climate Emergency declarations. During the workshop, the following points were raised by the project team:
 - Relative to other Council's, **Colchester's climate action to date has been impressive**. Over £1.5mil has been invested in carbon reduction projects and significant emission reductions have been achieved through the Council's actions;
 - Despite the increased fleet emissions the Council has **achieved their 40% emissions reduction target**;
 - The Council's historical focus on scope 1 and 2 emissions is consistent with other public sector organisations, and the scope and target of the Climate Emergency declaration is **typical of other Council's**;

Workshop discussion

- A number of questions were posed to the Council to try and **structure the development of the Council's action plan** (e.g. scope and target setting, approach to offsetting). Some highlights of the discussion included:
 - **Scope.** There were extensive discussions around what should and should not be included within the scope of the target. Particularly, the inclusion of the housing stock managed by Colchester Borough Homes was debated. This currently falls within CBC's scope 3 emission sources and is not included. Before making a firm decision, it was recommended by the Carbon Trust to measure the emissions resulting from the Council's scope 3 emissions.
 - **Target setting.** Both the officers and councillors recognised that a 2030 carbon neutral target is extremely ambitious and will be hard to achieve. However, there was a common feeling that Colchester have an obligation to go 'above and beyond' what is expected. There is a clear desire to take a leading role in Climate Action both in the region and at a national context.
 - **Offsetting** will almost certainly be required for CBC to achieve a 2030 carbon neutral target, and it is unlikely that between now and 2030 tree planting initiatives will offset all of CBC's unmitigated emissions. Both the Officers and Councillors recognised that this could result in a large annual expenditure, and various discussions were had as to how to make best-use of this (for example, by funding carbon-reducing initiatives in the local area). The consideration of and robust strategy towards offsetting should be explored by the Council in any plan that is put forward.

Workshop discussion

- Additionally, the workshops were used to explore concepts that the Council could potentially explore as part of their climate action.
- In particular, **Scenario modelling** and **science-based targets (SBTs)** were presented as points for consideration to the Council. More information can be found in the appendix of this report.
 - There was a **consensus that SBTs should not make up CBC's core target** and that the Council should continue to pursue a 2030 carbon neutral target. However, the **potential for SBTs to form wider targets** (e.g. for scope 3 emissions) was considered as an option;
 - There was particular interest in scenario modelling, and how it could be used to **focus carbon reduction efforts in the appropriate areas** by taking account of national and local trends & policies.
- Examples of good governance procedures (e.g. integrating climate-related KPIs for senior officers) and potential project ideas were also discussed as part of the broader carbon management planning.
- The workshop was concluded by the project team making a series of recommendations to the Council (see section 8 'Recommendations and next steps').

8

Recommendations and next steps

Recommendation 1

Understanding key Scope 3 emissions sources

- CBC are responsible for a much wider footprint outside of their direct control, which is currently not included in the Council's target. This includes contracts (e.g. grounds maintenance) as well as wholly-owned companies such as Colchester Borough Homes and Colchester Amphora;
- We would expect CBC's scope 3 to account for a significant portion of the Council's emissions. Emissions arising from these sources can be reduced from the corporate, procurement and everyday decisions made by the Council;
- There was significant debate amongst Council representatives as to whether or not these sources should be considered within the scope of the Council's target;
- Before making any decision, we recommend for the Council to measure and understand these emission sources to better inform the debate and allow the Council to come to a target that is ambitious but realistic.

Recommended next steps:

- Collect available data and measure relevant Scope 3 emissions

Recommendation 2

Moving towards a road map and action plan – pathway modelling

- We recommend that, before identifying specific project opportunities, the Council need to understand the impact of business as usual, national policies and local initiatives on the future carbon footprint.
- To do so the Council should perform macro-level scenario analysis, which would layer national and Council-level trends & policies to map CBC's emissions out to 2030;
- This will show what the make-up of the Council's emissions will be in 2030 on the current pathway, and in doing so provide steer on focus areas that the Council should prioritise for project implementation between now and then.
- This was discussed at the workshop and received positive feedback from both the Officers and Councillors. The slides presented are contained in the appendices.

Recommended next steps:

- Perform pathway modelling to identify priority focus areas for the Council

Recommendation 3

Footprint calculation

- CBC already has a strong data management and collection process in place for their scope 1 and 2 emissions. However, discrepancies in the calculation of previous footprints were identified and therefore it is important that CBC set up and maintain a robust data capture and verification process to be able to assess their progress.
- In addition, data collection for Rowan House should be refined so that greater confidence can be placed in the meter readings.

Recommended next steps:

- Write and agree an internal data management plan which sets out roles and responsibilities for data capture and verification as well as a timetable for reporting.

Recommendation 4

Maintain collaboration with business and the wider area

- It was very positive to see good collaboration within the organisation and a range of interests from the wider Borough. This should be maintained through ongoing engagement activities.

Recommended next steps:

- CBC should create an engagement plan for continuing to engage a range of stakeholders internally and throughout the Borough on the Climate Emergency

Recommendation 5

Ensure ethos of the Climate Emergency is embedded in broader strategies

- The qualitative review identified that a number of key strategies within CBC will need to be revised in 2020. In order to have maximum impact in the District, it is important that the Climate Emergency ethos and targets are a key feature of the new strategies.

Recommended next steps:

- CBC should engage officers responsible for the development of key strategy revisions early, to ensure the Climate Emergency forms a central pillar of the emerging strategy.



9

Appendix

Science-based targets (SBTs)

What is a science-based target?

- Within the Paris Climate Agreement 195 nations agreed to hold the increase in global average temperatures to 2°C and pursue efforts to limit the increase to 1.5°C.
- The Intergovernmental Panel on Climate Change (IPCC) along with the International Energy Agency (IEA) have developed a multitude of greenhouse gas reduction pathways that are required to achieve these warming targets.
 - This sets a 'carbon budget' of how many GHG emissions can be emitted over a certain period of time (e.g. 2050 or 2060).
- If a company, organisation, region, or otherwise is to set an emission reduction target in line with climate science requirements to meet the above, then that target is said to be 'science based'.

Science-based targets (SBTs)

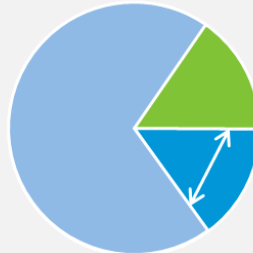
Setting a science-based target

- There are three fundamental components to the development of a science based target:
 - A carbon budget – a finite amount of carbon can be emitted
 - An emissions scenario – how is the budget distributed over time
 - An allocation approach – how is the budget within that scenario allocated amongst companies in the same level of disaggregation
- An analogy can be drawn by considering a pie:

1. Assessing the global carbon budget
How large is the pie?



2. Calculating the Councils carbon budget
How large is my slice?

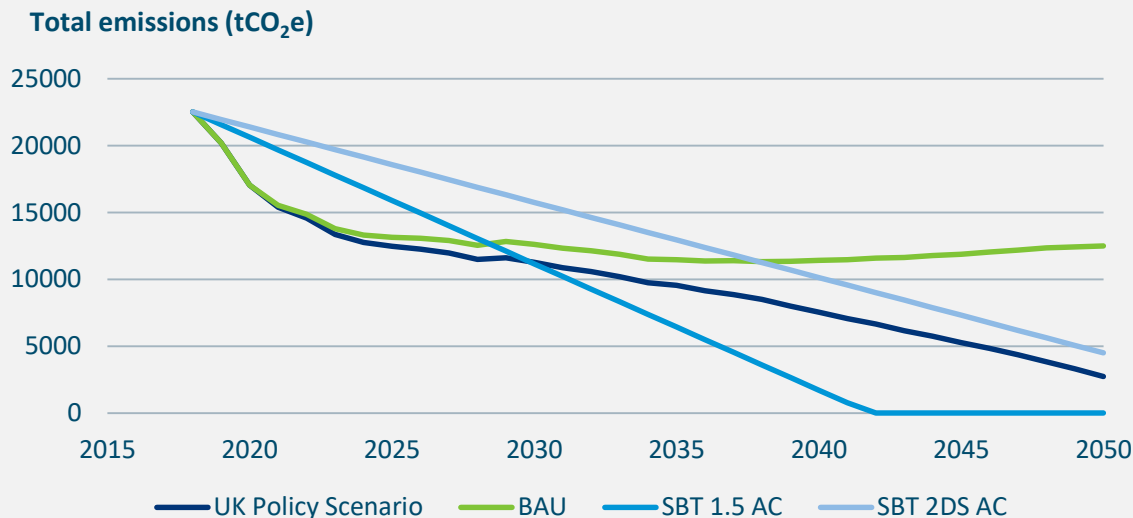


3. Compare your budget and your footprint
Am I eating too much?



Science-based targets (SBTs)

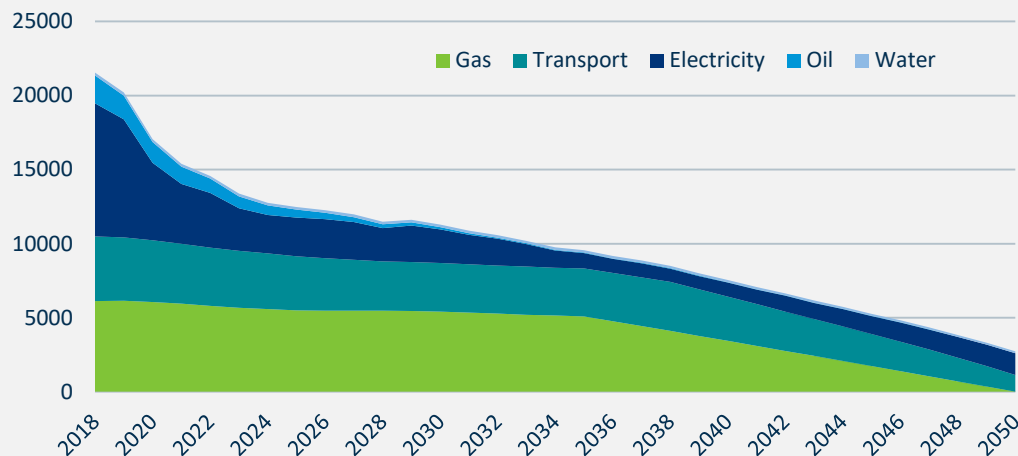
- An example of a science-based target that was conducted by the Carbon Trust was presented to the Council during the workshop.
- A 1.5°C-aligned reduction pathway would result in this Council reaching carbon neutral by 2042.



Above: Science-based target example. This data does not represent Colchester Borough Council

- An example of pathway modelling that conducted by the Carbon Trust was presented to the Council during the workshop.
- For this Council, the modelling showed that by 2050 the majority of their emissions would be a result of electricity and transport.
- The allows the Council to identify where the gap to target exists and therefore prioritise implementation measures.

Total emissions (tCO₂e) with UK Government Policy Scenario



Above: Pathway modelling example. This data does not represent Colchester Borough Council

Appendix: Data Sources

- Energy, vehicle mileage, utilities data – Colchester Borough Council
- Building benchmarks - CIBSE
- Emission Factors – BEIS
- UK emission factors projections – BEIS

Whilst reasonable steps have been taken to ensure that the information contained within this publication is correct, the authors, the Carbon Trust, its agents, contractors and sub-contractors give no warranty and make no representation as to its accuracy and accept no liability for any errors or omissions. All trademarks, service marks and logos in this publication, and copyright in it, are the property of the Carbon Trust (or its licensors). Nothing in this publication shall be construed as granting any licence or right to use or reproduce any of the trademarks, services marks, logos, copyright or any proprietary information in any way without the Carbon Trust's prior written permission. The Carbon Trust enforces infringements of its intellectual property rights to the full extent permitted by law. The Carbon Trust is a company limited by guarantee and registered in England and Wales under company number 4190230 with its registered office at 4th Floor Dorset House, Stamford Street, London SE1 9NT. Published in the UK: 2019.

© The Carbon Trust 2019. All rights reserved.