

Report of the Executive Director

UPDATE ON CARBON EMISSIONS AND PROGRESS TOWARDS CARBON NEUTRALITY BY 20271. Purpose of report

To update Members on the Council's carbon footprint and progress towards becoming carbon neutral by 2027.

2. Background

There are 2,160 days remaining (as from 31 January 2022) for the Council to achieve its commitment to become carbon neutral by 31 December 2027.

In November 2021, the Environment and Climate Change Committee approved the re-calculation of the Council's own operation baseline to incorporate emission data that had previously not been included. The new baseline was established at 3,704 tCO_{2e} for 2018/19.

As part of on-going carbon emission monitoring, a half yearly progress update has now been prepared (April to September 2021). Emissions for this period have been calculated at 1,003 tCO_{2e}. Further detail and analysis of this data can be found in Appendix 1.

Borough emission data has now been updated and includes the most current information supplied by the Business, Energy and Industrial Strategy Department (BEIS). In 2019, Broxtowe Borough emitted 501.2 ktCO_{2e}. Borough emissions have fallen 32% from 2005 levels (732 ktCO_{2e}). As reported previously, this is mainly due to the greening of the grid with less progress made in other areas. Emission data will be regularly monitored to establish patterns and trends. It will also help to identify key areas of focus for carbon reduction activities.

To support Climate Change strategy and Green Futures programme reporting, a simplified, progress report has been captured within the dashboard (Appendix 2). New actions are currently being identified and will be presented at the next committee for potential inclusion within the Green Futures programme. Further detail on progress can be found in Appendix 1.

3. Financial implications

Financial implications of Climate Change and Green Futures will be considered in individual reports.

Recommendation

The Committee is asked to NOTE the report.

Background papers: Nil

APPENDIX 1

1. Broxtowe Borough Council half year emission report (April-September 2021/22)

For the period April to September 2021, the Council’s own operations emitted 1,003 tCO₂e (Figure 1). Half yearly data from previous years is currently not available, so a comparison to ascertain progress on emission reductions is not possible. However, a system is in place to address this going forward.

Figure 1 (below) provides a detailed breakdown of the different carbon scopes for the Council’s own operations. It emphasises how much the fleet contributes overall to the Council’s carbon footprint and highlights the importance of decarbonizing the fleet. A report on this subject will be presented to members at the next Environment and Climate Change Committee.

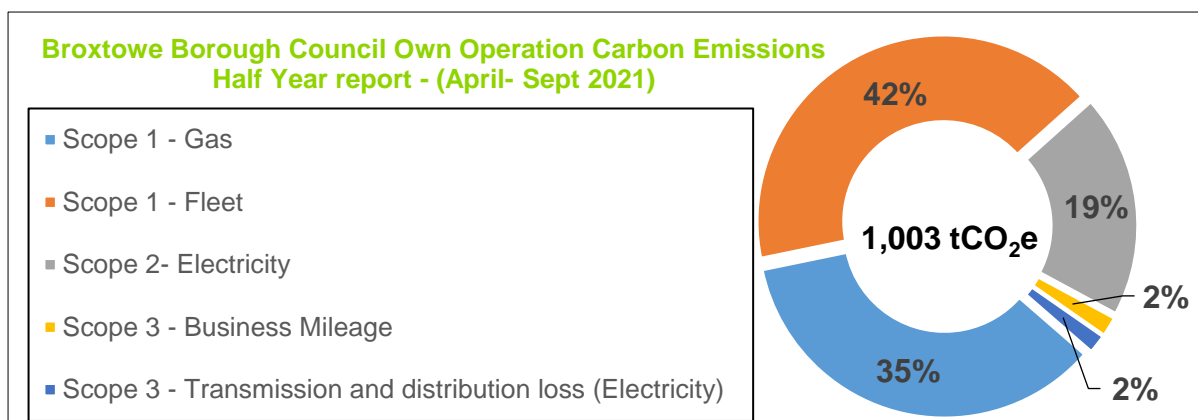


Figure 1 - Half Year Carbon emissions for Broxtowe Borough Council own operations

It should be noted that the half year data covers the warmer months, hence emissions are only a third of the levels captured in a full year for 2020/21 (Figure 2). Given this, it is not possible to provide a forecast at this stage to determine whether carbon emissions for the Council have decreased when compared with 2020/21.

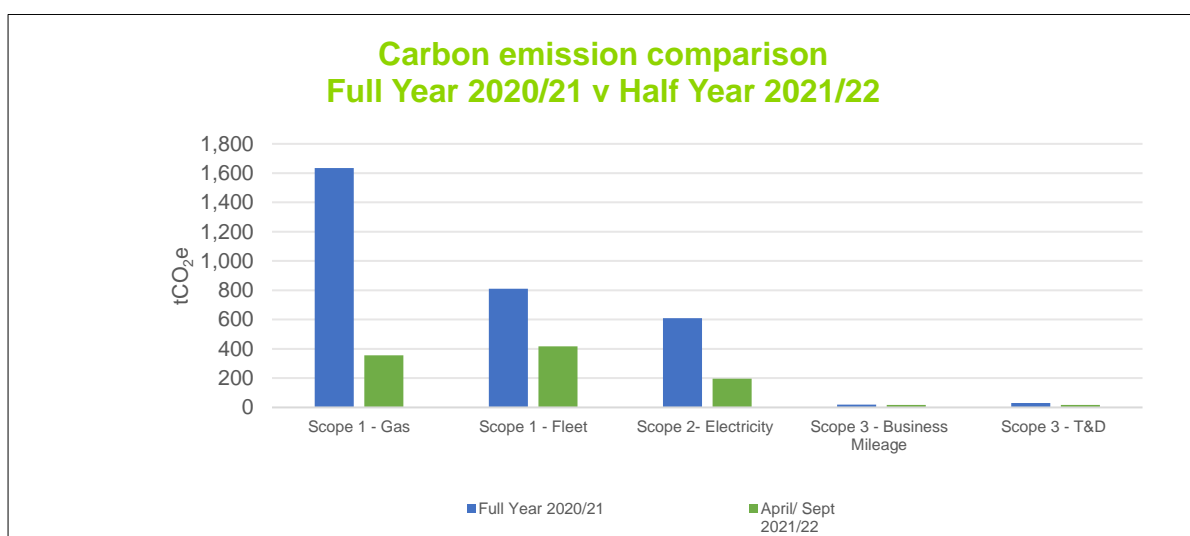


Figure 2 - Comparison of half year emissions 2021/22 v full year 2020/21

Figure 2 also highlights (as expected) that the vast majority of utility usage (Gas and Electricity) takes place in the autumn and winter months. April to September fleet

emissions are approximately half of what was reported for the whole of 2020/21. This indicates that it is unlikely that this will decrease for 2021/22.

2. Progress towards becoming carbon neutral (Council Operations) by 2027

The Council has committed to become Carbon neutral by 31 December 2027 and there are 2,160 days remaining to achieve this (from 31 January 2021).

Figure 3 (below) tracks the Council’s current progress to date and trend lines based on current performance and for a zero emission ambition. The graph shows:

- Actual carbon emissions (Blue line)
- Trend line for carbon emission reduction should progress continue at the current rate (Green dotted line).
- The pace of reduction necessary in order for the Council to achieve zero emissions by 2027 (Yellow dotted line). It should be noted that there will always be some form of residual carbon emissions, so the aim of the Council should be to achieve as close to zero as possible.

The red line in figure 3 (below) marks a 50% reduction level in carbon emissions from the 2018/19 baseline. This marker will help emphasize carbon emission reduction progress; ideally the Council need to be achieving levels of around 1,852tCO₂e by 2023 to ensure any carbon off setting is kept to an absolute minimum.

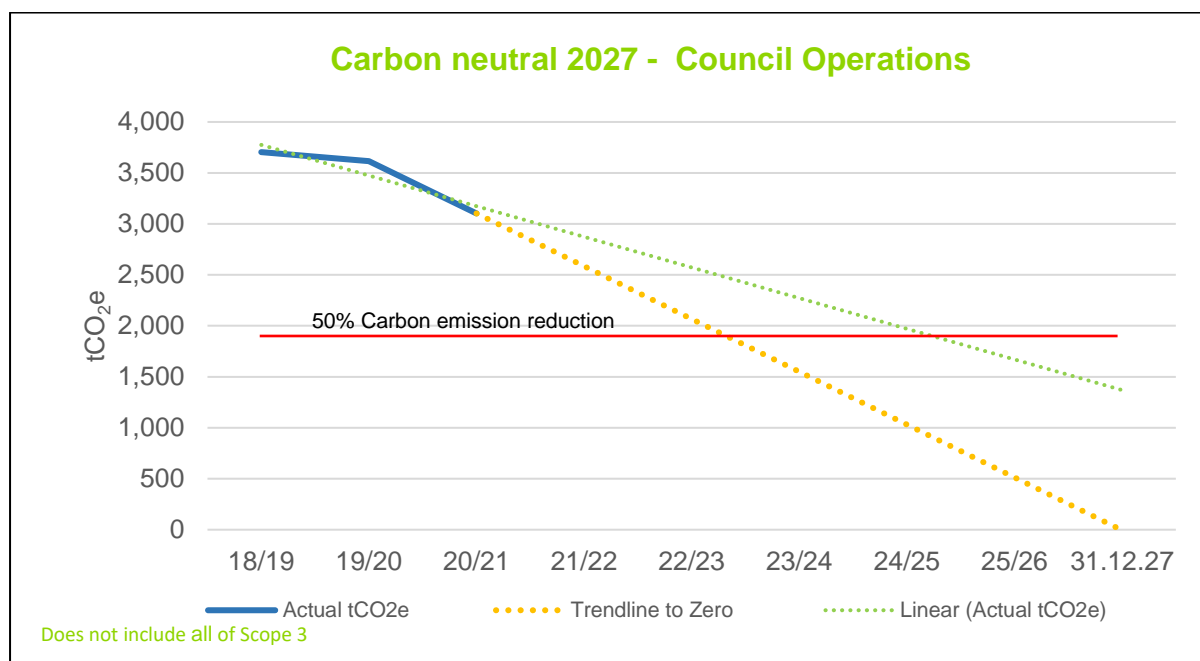


Figure 1 - Progress towards becoming Carbon neutral

3. Borough emissions update

Borough emission data has now been updated and in 2019 the Borough of Broxtowe is calculated to have emitted 501.2 ktCO₂e (source: Business, Energy and Industrial Strategy Department: UK local authority carbon dioxide emissions national statistics).

In 2017, BEIS changed the way they reported data on emissions across Commercial, Industrial and Institutional buildings. This resulted in a significant increase to the borough emission data previously reported in the Climate Change and Green Futures Strategy document (Previously reported for 2017, 493.6 ktCO₂e, compared to the updated figure for the same year of 508.6 ktCO₂e – Source BEIS).

The 2019 breakdown of CO₂e from the key sector areas are shown in the table below:

Sector	2019 (kt CO ₂ e)	Description
Non-domestic	203	The usage from commercial, industrial, retail and public sector properties.
Domestic	172	This is the gas and electricity usage from domestic dwellings in Broxtowe Borough including social housing.
Transport	126	Carbon from all vehicles including cars, LGVs, motorcycles, buses and HGVs.

Table 1 – 2019 sector CO₂e emissions from Broxtowe borough

Figure 4 (below), provides a summary of the Borough of Broxtowe’s carbon emissions from 2005 to 2019 (released in 2021). The graph shows that borough emissions have fallen 32% from nearly 732 ktCO₂e in 2005 (6.8 tCO₂e per capita) to 501.2 ktCO₂e in 2019 (4.4 tCO₂e per capita).

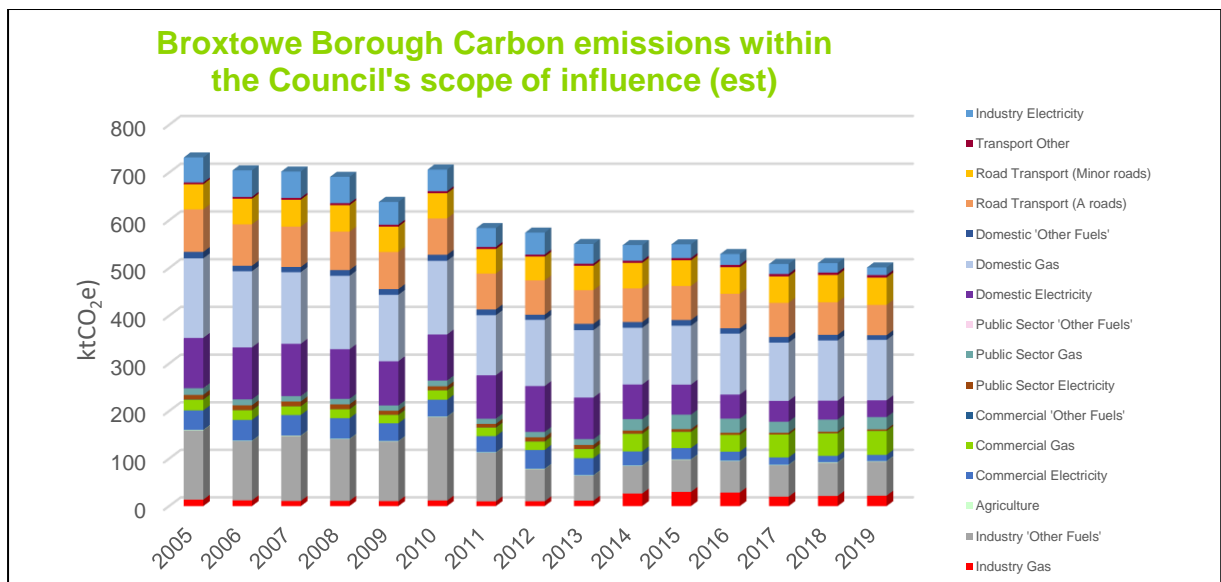


Figure 2 - Broxtowe Borough's Carbon emissions

Non domestic emissions (from commercial, industrial, retail and public sector properties) accounts for the largest proportion of borough emissions (41%). This is followed by domestic (34%), (from gas and electricity usage from domestic dwellings)

and then transport (25%) (from all vehicles including cars, LGVs, motorcycles, buses and HGVs).

Figure 5 shows total borough carbon emissions since 2005. The yellow dotted trend line indicates potential emission levels in 2027, should reductions continue at the current rate.

Borough emission figures will now be reported annually after the release of the BEIS data (usually mid-year).

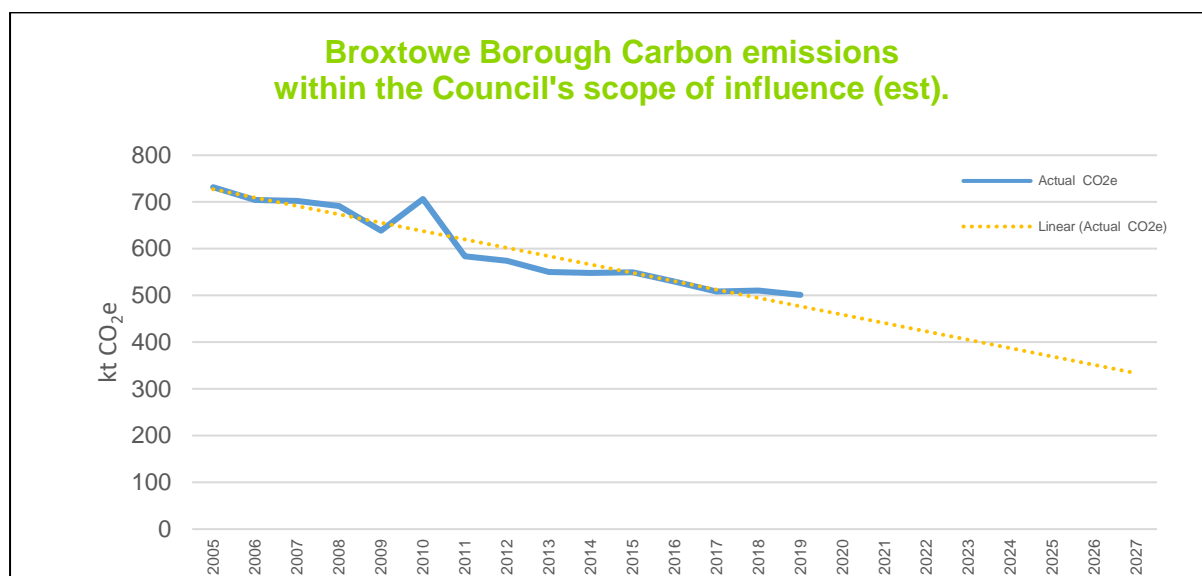


Figure 3 - Borough emission trend line

4. Broxtowe Borough’s Carbon Budget

Definition of a Carbon Budget

This is the amount of carbon dioxide permitted to be emitted over a certain period of time, which would allow global warming to be limited to no more than 1.5° C. Dealing with the environmental consequences from a temperature rise above the 1.5° C threshold would be seen as irreversible.

Tyndall Centre for Climate Research

Researchers from The University of Manchester and the Tyndall Centre for Climate Change Research have developed an online tool which can be used by local authorities to help understand their role in meeting the climate change objectives.

Tyndall Carbon Budget Reports provide UK local authority areas with budgets for energy related CO₂ emissions from 2020-2100. This allows users to calculate a carbon budget for their Council and will enable climate change targets to be set. These targets will then help meet the objectives of the United Nations Paris Agreement on Climate Change.

Carbon Budget for Broxtowe

The Carbon budget identified for Broxtowe applies to only CO₂ emissions from energy systems. An energy system is defined as 'systems meeting our everyday needs through a range of services, including; heating, cooling, mobility and powering appliances' (Source: Tyndall Centre for Climate Change).

Using the tool, the report recommended that for Broxtowe to make a 'fair' contribution towards the 1.5°C temperature change threshold for the period 2020 to 2100, the borough should stay within a maximum cumulative carbon dioxide budget of 4.1 million tonnes (MtCO₂). The report warns that at 2017 CO₂ emission levels, Broxtowe would use its entire carbon budget up within six years from 2020.

A further report providing more details on the Carbon budget for Broxtowe Borough will be bought to the next committee.

5. Green Futures and Climate Change Progress

To support the monitoring of the Climate Change strategy and Green Futures programme, a simplified report methodology has been introduced which has been incorporated within the carbon reporting dashboard (shown in Appendix 2).

There are a total of 145 actions; the progress of which has been categorised into the following status updates:

- Completed
- In Progress
- Overdue
- Not started
- Warning
- New

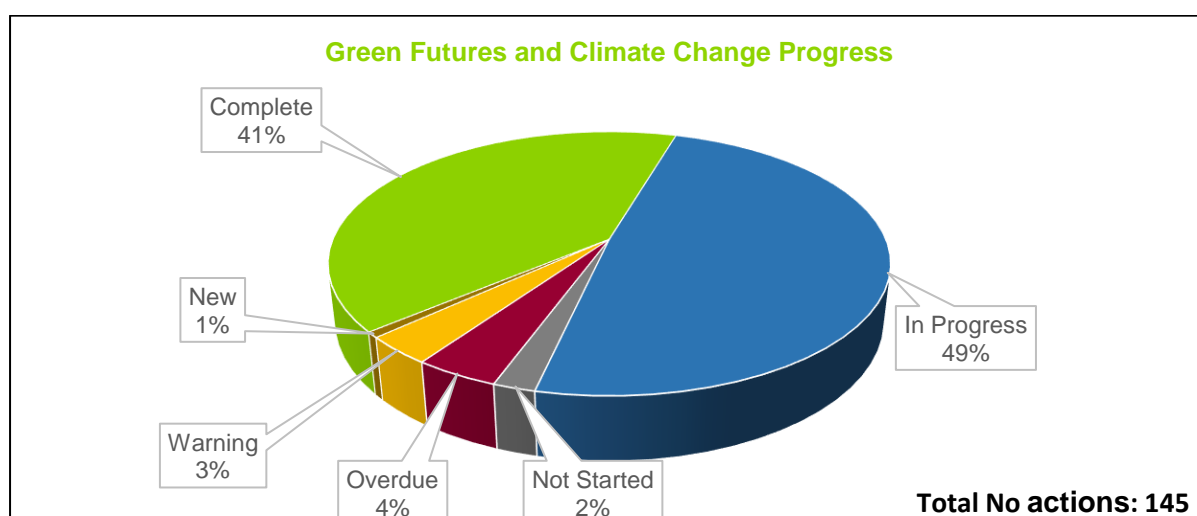


Figure 4 - Green Futures and Climate Change action plan progress

Figure 6 details progress across all themes. 90% of all the programme actions are either complete or in progress. There has been positive progress overall. New actions will continue to be identified to further advance carbon emission reduction, these will be presented for consideration at future committees.

There are five actions that are overdue and these have been detailed in the table below.

Theme	Action	Reason
Climate Strategy	Establish a baseline for CO ₂ emissions based on Scope 3 emission sources (e.g. impact of supply chain, housing stock, employee travel to and from work, waste and water)	Some progress has been made in determining the Council’s Procurement Scope 3 emissions, however the process is complex and requires additional resource which is currently being assessed.
Mileage	Introduce home to work mileage survey as part of the induction process for all new employees	HR are in the process of designing the survey sheet.
Energy and Building	Investigate further opportunities for the installation of solar panels on Council Buildings for example the Depot	Nottingham City Report on Solar PV for the depot has been received and is currently being evaluated.
Recycling	Create a new recycling officer role whose purpose is to promote the principles of the Waste Hierarchy, promote good recycling behaviour and responsible waste management practices	The post has now been advertised a number of times. No suitable candidates have applied. A review of current vacancies within the Environment department is now being undertaken.
Housing Improvements	Consideration will be given to retro-fitting of PV panels, especially to stock that is not subject to right to buy.	Desk top study started to review the possibility of using some additional independent living scheme roofs. Further work due to resume.

Table 2 - Overdue actions from the Climate Change and Green Futures programme.

There are three actions that have not been started and four actions that have a warning. These are detailed in table 3.


Theme	Action	Status	Comment
Climate Strategy	Using the principles of Carbon Budgeting create an approach that aligns with the budget process and determines and informs the level of CO ₂ e anticipated from investments in service provision.	Not Started	Concept will be developed moving forwards to help shape the direction of travel with regards achieving carbon neutrality.
Fleet and Transport	Using available data, produce a report on vehicle types registered in the Borough along with scenarios indicating the behavioural change necessary to help achieve carbon neutrality by 2027.	Not Started	Investigations are still taking place on where the relevant data sets for this exercise can be obtained from.
Energy and Building	Determine and report on approaches that will assist in reducing the organisations energy consumption further.	Warning	An external consultant (ARC) has been appointed to prepare a full asset management strategy across the whole estate. Their terms of reference include the identification of potential energy efficiency opportunities. They are due to report in the spring.
Energy and Building	Determine and report on approaches that will further assist the Council's building infrastructure reduce its carbon emission.	Warning	This will form part of ARC's remit detailed above.
Energy and Building	Leisure Centres (708t CO ₂ e 2018/19): Proceed with the Leisure Facilities Strategy which may lead to more efficient new buildings (longer term and requires very significant funding).	Warning	Leisure Strategy is currently in progress. If new buildings are identified as part of the scope then specification options for maximising energy efficiency will be high on the agenda.
Energy and Building	Review the energy efficiency of all appliances in kitchens and laundry rooms at Independent Living schemes, and produce a replacement programme to replace with more energy efficient models.	Warning	Review being completed ready for consideration for 2022/23 budget setting. Replacement programme still to be finalised.

Theme	Action	Status	Comment
Energy and Building	Investigate the opportunity to create a woodland burial site – achieving eco burials within a woodland setting.	Not Started	This action is included in the Bereavement Services Business Plan for 2022-2025 as an area for development.

Table 3 - Not started or warning actions from the Climate Change and Green Futures programme.

APPENDIX 2

Climate Change and Green Futures Dashboard

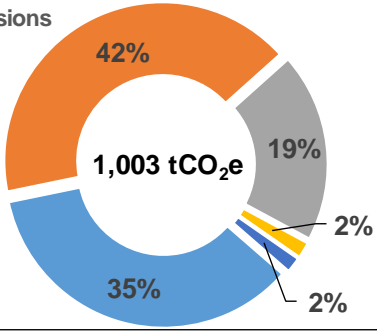


**Broxtowe
Borough
COUNCIL**

Days remaining till Carbon Neutral 2027:
2,160

Broxtowe Borough Council Own Operation Carbon Emissions
Half Year report - (April- Sept 2021)

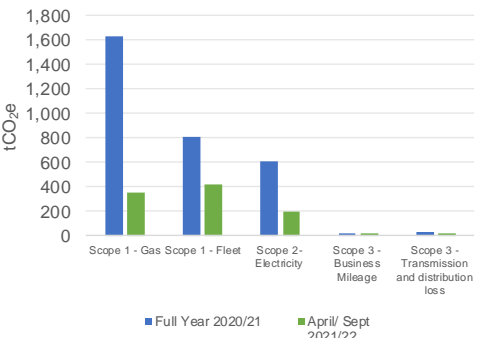
- Scope 1 - Gas
- Scope 1 - Fleet
- Scope 2- Electricity
- Scope 3 - Business Mileage
- Scope 3 - Transmission and distribution loss (Electricity)



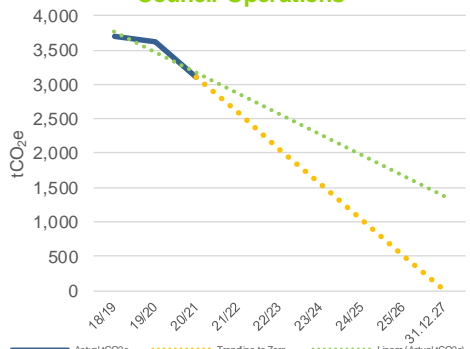
1,003 tCO₂e

Broxtowe Borough Council own operation Carbon emissions - 2020/21
3,103 tCO₂e

Carbon emission comparison
Full Year 2020/21 v Half Year 2021/22



Carbon neutral 2027
Council Operations

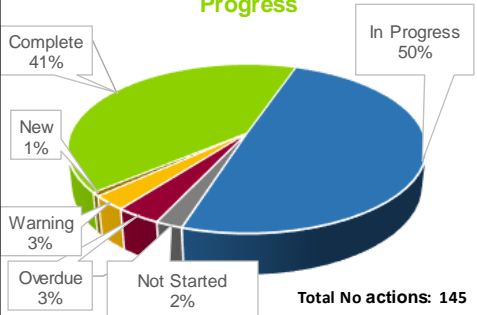


Does not include all of Scope 3


Action Plan Progress

Completed	60
In Progress	72
Overdue	3
Not Started/Warning	9
New	1

Green Futures and Climate Change Progress



Key Highlights



1. 2,500 trees planned to be planted for 2021/22
2. Environment Act became law - 9 November 2021
3. 27% of Green Rewards users are from Broxtowe Borough
4. The Council will have a total of 8 electric vehicles by the end of January 2022
5. 6% of small plant equipment used at the depot is electric