Broxbourne Borough Council: Carbon Emissions Report

1. Organisation information

Broxbourne Borough Council is a local authority registered at Bishops College, Churchgate, Cheshunt, Hertfordshire EN8 9XQ.

2. Reporting period

1 April 2019 – 31 March 2026

3. Reporting Approach

The Council based this report on HM Government's Environmental Reporting Guidelines document.

4. Introduction

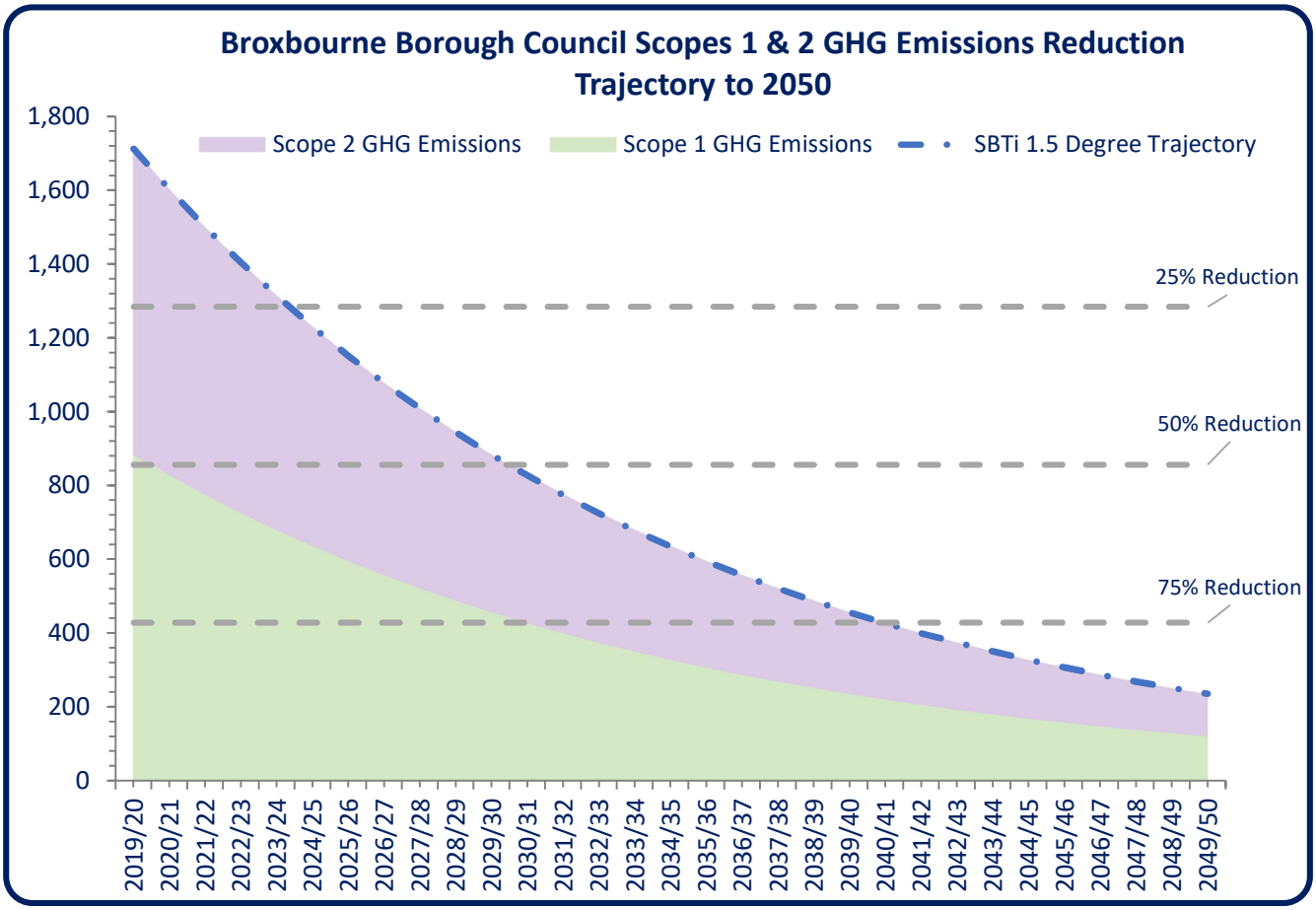
Broxbourne Borough Council is currently delivering its Environmental Sustainability Strategy and Action Plan 2026-2028 which sets three main objectives:

- A Sustainable Council
- A Greener Broxbourne
- Supporting Action by Businesses and Residents

The actions that the Council is taking to reduce its carbon footprint by delivering the Environmental Sustainability Strategy and Action Plan have been complemented by a Cabinet decision in March 2023 which confirmed a commitment to achieve carbon neutrality by 2050. This means that the Council has to continuously reduce its underlying carbon emissions resulted from heating and powering its buildings and fuelling its fleet vehicles.

The Council commissioned a team of environmental consultants to develop a carbon monitoring tool, and to calculate the carbon emissions of the 2019/20 baseline year. The monitoring tool maps out an annual carbon emissions reduction of 6.4% from 2019 to 2050 so that the Council achieves its net zero target, as showed in Graph 1 below.

Graph 1: Carbon (Greenhouse Gas - GHG) Emissions Trajectory to 2050



The bulk of the Council's CO2 emissions come from:

- Gas and electricity consumption at operational sites including office buildings, depots, leisure centres, sports pavilions, hostels etc.
- Fleet vehicles fuel e.g., vans and pool cars.

5. Organisational boundary

The Council has included emissions over which the Council has full, direct operational control (including assets, infrastructure and operations), while currently excluding other selected emissions sources which the Council has only partial influence over.

6. Operational Scopes

Table 1: Operational Scopes

Scope One	Scope Two	Scope Three	Not Included (Scope Three)
Fuel used to heat buildings (e.g. natural gas, biomass)	Purchased electricity for buildings and other electricity consuming sites	Business travel in staff member's own	Fuels used by BEST Environmental Services fleet, including the

	(e.g. offices, leisure centres, depots, car park and public conveniences).	vehicles ('grey fleet')	grounds maintenance machinery
			Electricity (transmissions and distribution factors)
Fuel used in Council vehicle fleet			Business mileage by public transport (bus and train)
			Water consumed
			Staff commuting

The Council seeks to widen the scope of reported emission source in future years and is exploring methods of achieving this.

Any significant changes to the Council's organisational operational boundary (e.g. acquisitions, divestitures or outsourcing) may trigger a recalculation of the baseline emissions in line with government greenhouse gas emissions guidance. Broxbourne Borough Council has set a threshold of 5% change in baseline emissions as the trigger for any recalculation of the council's baseline.

7. Emissions Calculations

Emissions were calculated for each year based on HM Government's 'Greenhouse gas reporting: conversation factors' document corresponding to the year in cause. The calculations were then compiled into the two tables below and input into the monitoring tool to map out the annual carbon emissions reduction of 6.4% from 2019 to 2050.

Table 2: Total Carbon emissions for the 2019 - 2026 period

Emissions data reported in tonnes of CO2 equivalent (tCO2e)							
Source	**Baseline 2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**2024/25**	**2025/26**
Scope 1							
Natural Gas	866.7	826.6	899.74	976.6	839.45	971.93	836.52
Biomass	1.903	0.165	1.85	2.8	3.25	5.82	5.00
Vehicle Fleet	13.08	5.21	6.26	7.1	7.51	7.54	7.74
Scope 2							
Electricity (purchased)	833.51	611.24	595.02	673.5	734.32	565.87	622.11
Scope 3							
Grey fleet	11.08	5.297	6.26	6.29	6.69	5.71	5.43
Total Emissions	**1726.27**	**1448.51**	**1509.13**	**1666.32**	**1591.22**	**1556.87**	**1476.80**

Table 3: Total Carbon emissions, target and percentage deviation from target

Emissions data reported in tonnes of CO2 equivalent (tCO2e) 2019-2026							
Year	**Scope 1**	**Scope 2**	**Scope 3 Grey fleet**	**Total Emissions**	**Change vs baseline**	**Target Emissions (6.4% annual reduction from baseline year until 2050)**	**% Deviation from Target**
2019/20	881.68	833.51	11.08	1726.27	0	1,726.27	0
2020/21	831.98	611.24	5.30	1448.52	-16.09%	1,605.43	-9.774%
2021/22	907.85	595.02	6.26	1509.13	-12.58%	1,502.68	0.429%
2022/23	986.53	673.50	6.29	1666.32	-3.47%	1,406.51	18.472%
2023/24	850.22	734.32	6.69	1591.22	-7.82%	1,316.49	20.868%
2024/25	985.29	565.87	5.71	1556.87	-9.81%	1,232.24	26.345%
2025/26	**849.27**	**622.11**	**5.43**	**1476.80**	**-14.45%**	**1,153.37**	**28.042%**

8. 2025 – 2026 Data Analysis

Year-on-year CO_2 emissions decreased by 5.14% in 2025/26, from 1,556.8 tCO_2e to 1,476.8 tCO_2e. This is the lowest annual total recorded since monitoring began and represents a 14.45% reduction against the 2019/20 baseline of 1,726.3 tCO_2e.

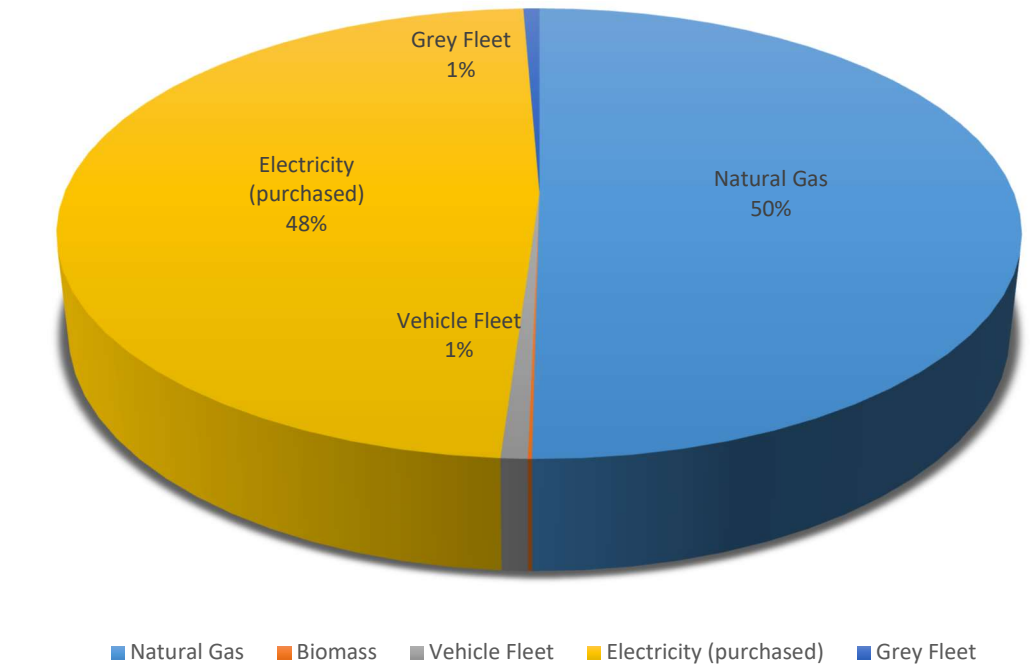
The reduction was driven by natural gas, where emissions fell by 13.93% from 971 tCO_2e to 836 tCO_2e on consumption of 4,572,144 kWh across the Council's operational sites. Emissions from purchased electricity moved in the opposite direction, rising by 9.94% from 565 tCO_2e to 622 tCO_2e. This increase occurred despite a fall of approximately 15% in the UK grid conversion factor,and reflects recorded consumption of 3,514,722 kWh across 82 supply points.

Emissions from the Council's own vehicle fleet were 7.74 tCO_2e across 47,696 miles. This was an increase on the previous year, of this mileage, 15,311 miles were driven by the four battery electric vehicles in the fleet, which carry a zero tailpipe emissions factor. Grey fleet emissions totalled a further 5.43 tCO_2e across 19,643 business miles in staff members' own vehicles.

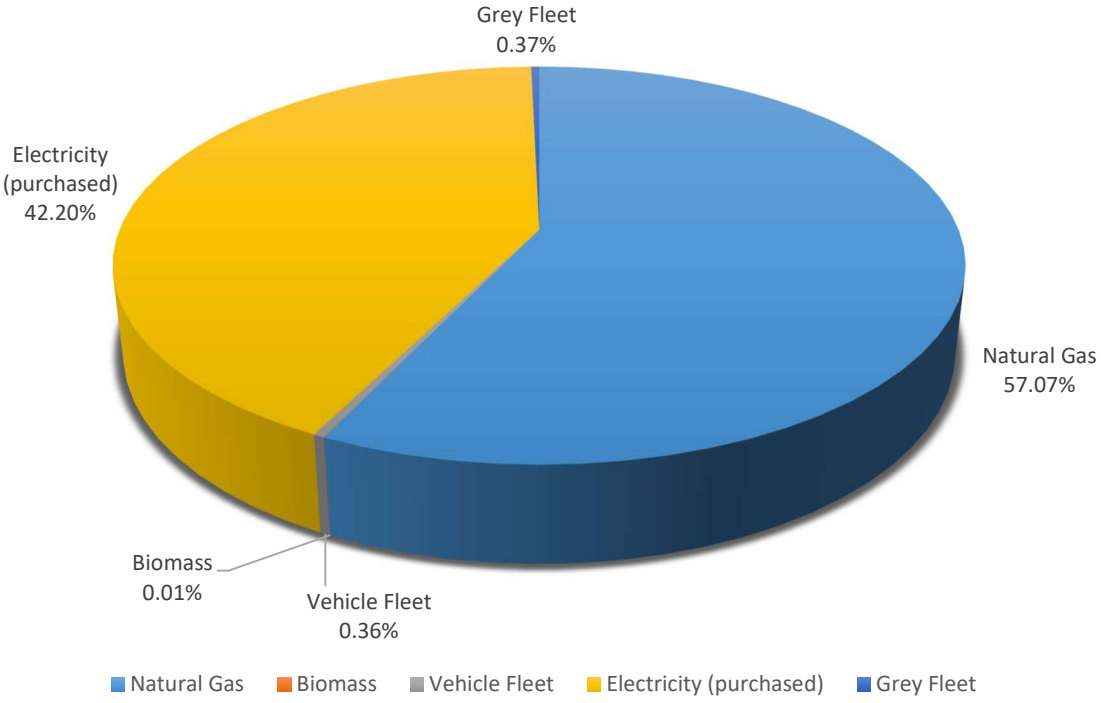
The Council is exceeding the annual reduction trajectory (as shown in Graph 1) by 28.04%, which is equivalent to 323.4 tCO_2e. To stay within the trajectory, CO_2 emissions should not have exceeded 1,153 tonnes CO_2e. While the gap to the trajectory has widened slightly in percentage terms, the absolute gap has narrowed marginally from 324.63 tCO_2e in 2024/25 to 323.43 tCO_2e in 2025/26. The rate of reduction achieved in 2025/26 (5.14%) is approaching the 6.4% annual reduction the trajectory requires.

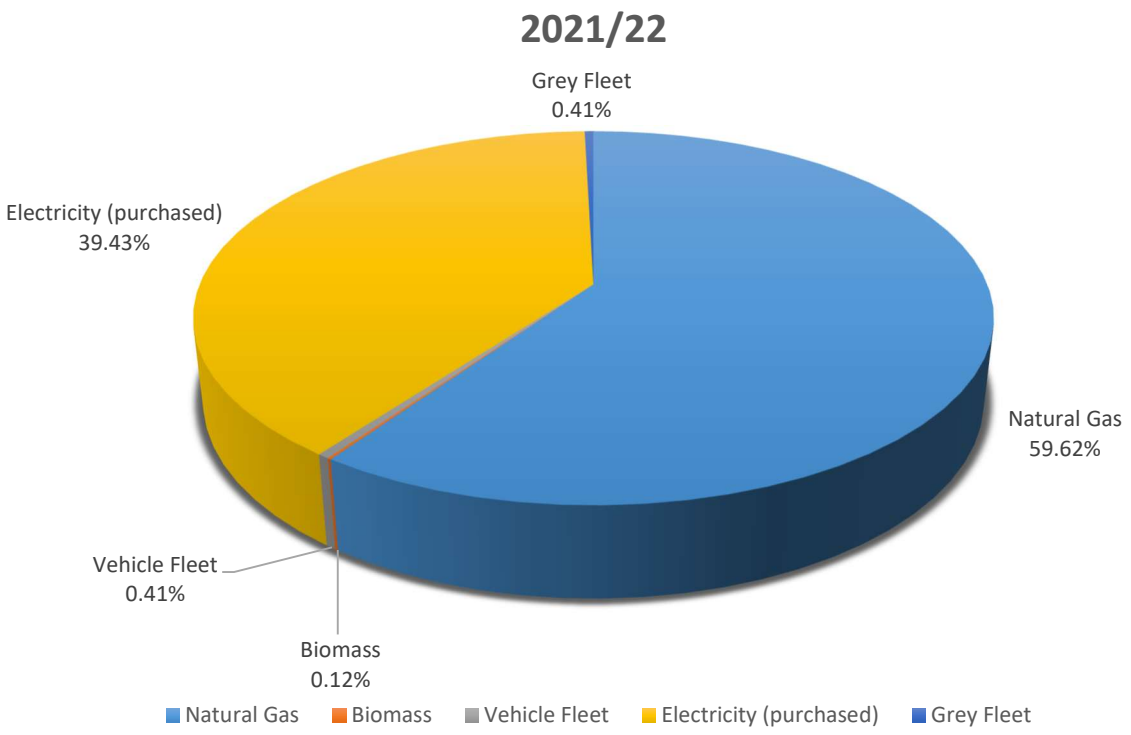
Emissions for 2025/26 were calculated using the UK Government's 2025 Greenhouse Gas Reporting Conversion Factors, published in June 2025. The principal factors applied were 0.18296 kg CO_2e per kWh for natural gas on a gross calorific value basis, 0.17700 kg CO_2e per kWh for grid electricity, and 0.01150 kg CO_2e per kWh for biomass.

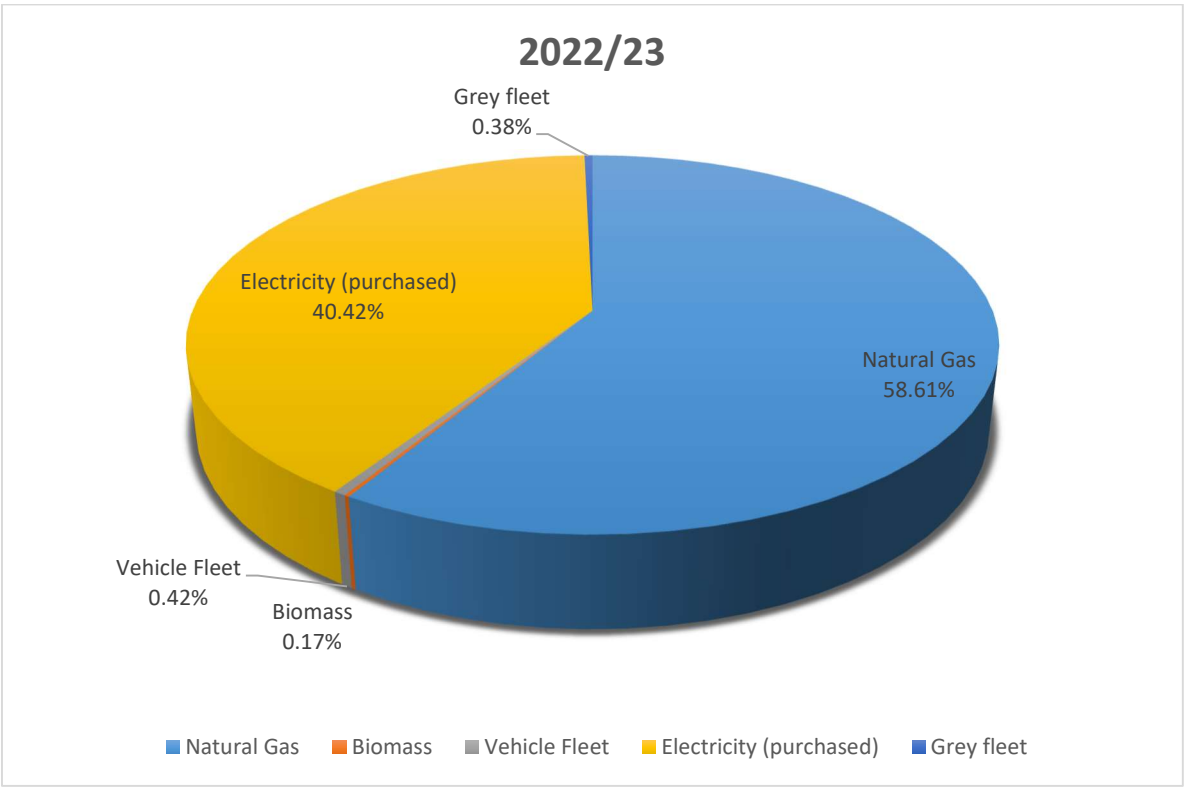
Baseline Year 2019/20

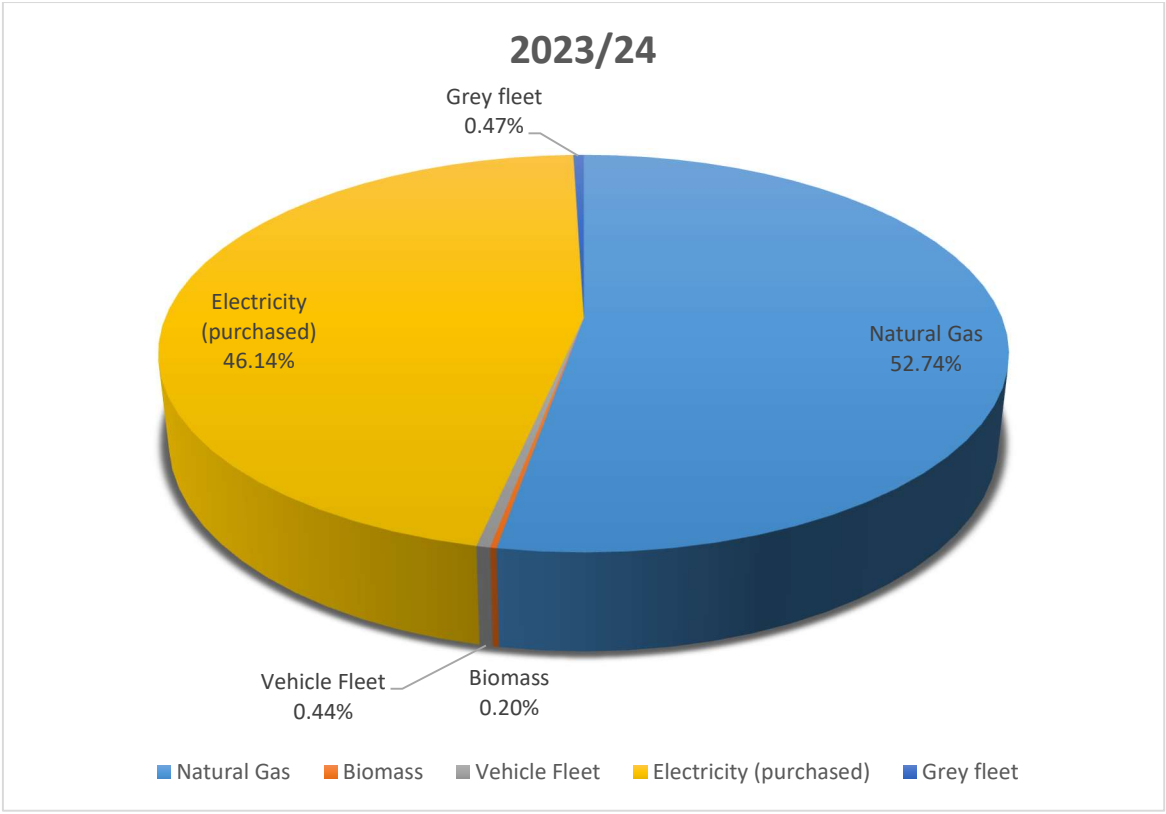


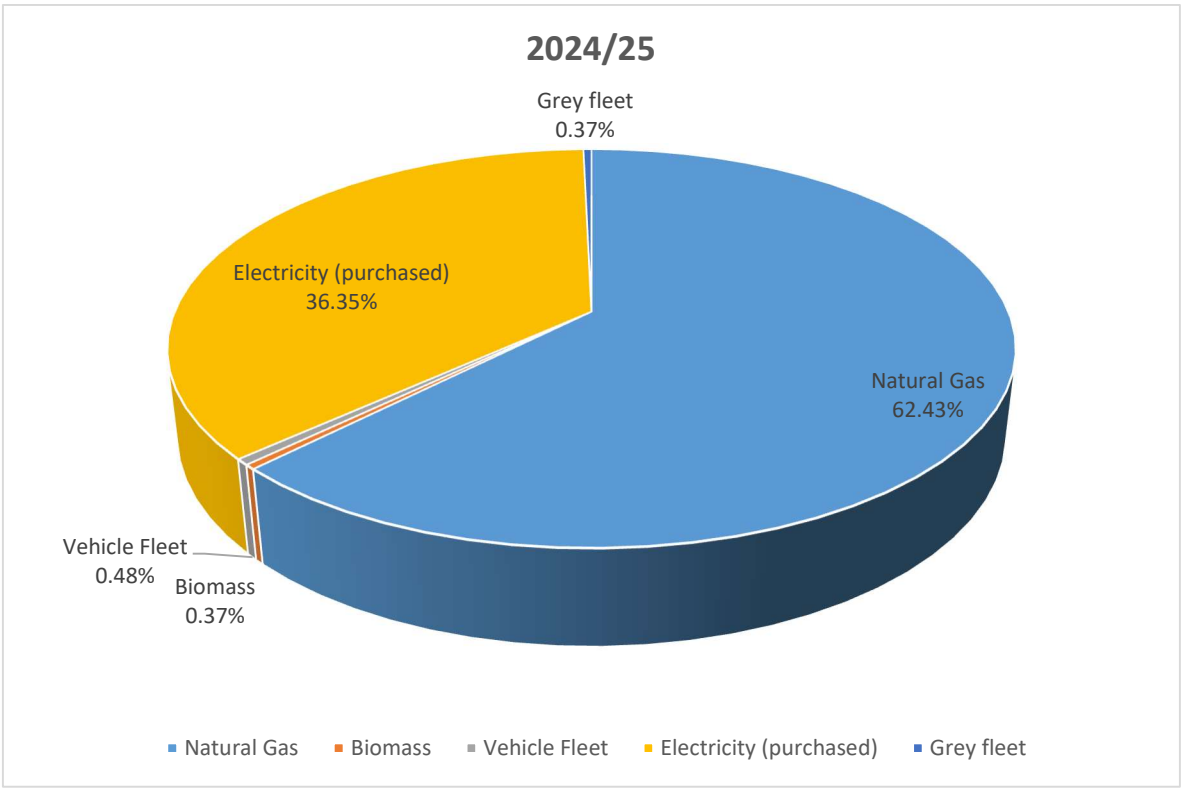
2020/21

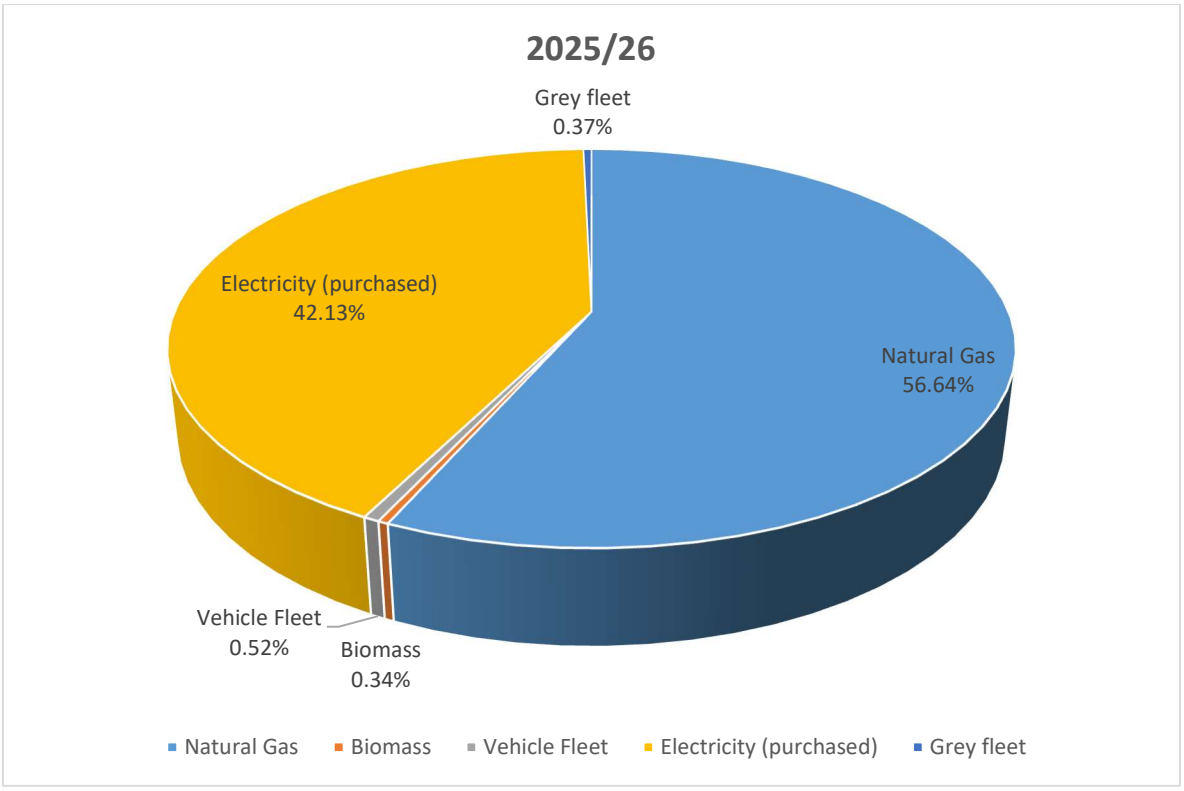



2021/22
Grey Fleet
0.41%
Electricity (purchased)
39.43%
Natural Gas
59.62%
Vehicle Fleet
0.41%
Biomass
0.12%
Natural Gas
Biomass
Vehicle Fleet
Electricity (purchased)
Grey Fleet


2022/23
Grey fleet
0.38%
Electricity (purchased)
40.42%
Natural Gas
58.61%
Vehicle Fleet
0.42%
Biomass
0.17%
Natural Gas
Biomass
Vehicle Fleet
Electricity (purchased)
Grey fleet


2023/24
Grey fleet
0.47%
Electricity
(purchased)
46.14%
Natural Gas
52.74%
Vehicle Fleet
0.44%
Biomass
0.20%
Natural Gas
Biomass
Vehicle Fleet
Electricity (purchased)
Grey fleet


2024/25
Grey fleet
0.37%
Electricity (purchased)
36.35%
Natural Gas
62.43%
Vehicle Fleet
0.48%
Biomass
0.37%
Natural Gas
Biomass
Vehicle Fleet
Electricity (purchased)
Grey fleet


2025/26
Grey fleet
0.37%
Electricity (purchased)
42.13%
Natural Gas
56.64%
Vehicle Fleet
0.52%
Biomass
0.34%
Natural Gas
Biomass
Vehicle Fleet
Electricity (purchased)
Grey fleet