



Carbon Reduction Plan
for
First Bus

Quality Control

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1. Introduction

First Bus has been assessing its carbon footprint since 2015 in line with the Streamlined Energy and Carbon Reporting (SECR) requirements and the Greenhouse Gas Protocol reporting standard. The FY2020 baseline year (1st April 2019 – 31st March 2020) has more recently been adapted to meet the requirements of UK Government’s Procurement Policy Note 06/21: Taking account of Carbon Reduction (PPN06/21). This carbon reduction plan has been produced in line with the scope of the FY20 baseline year assessment.

First Bus is already in the process of considering its wider scope 3 emissions, and in June 2023 was delighted to have its Net Zero ambitions approved by the Science Based Targets Initiative (SBTi).

2. Baseline Year Footprint

The First Bus baseline year footprint is provided below in Table 1. The FY20 period has been selected as the baseline year as it represents the most recent period of typical activity prior to the Covid 19 pandemic.

The vast majority of First Bus’ carbon footprint is the scope 1 diesel fuel consumption associated with the bus fleet. These emissions will be the main focus of the First Bus carbon reduction plan, with the commitment to deliver a 100% owned or leased, zero emission bus fleet by 2035, – First Bus’ ‘Zero Emission Mission 2035’.

The scope 2 emissions have been dual reported to highlight the fact that all of the First Bus sites are using renewable electricity.

Table 1: First Bus baseline year footprint

Baseline Year FY20: 1 st April 2019 – 31 st March 2020	
Emissions	Tonnes CO ₂ e
Scope 1	334,328
Scope 2 (Market based)	0
Scope 2 (Location based)	5,072
Scope 3	
- Cat 5: Waste Generated in Operations	8,261
- Cat 6: Business Travel	
- Cat 7: Employee Commuting	
Total Emissions (Market Based)	342,589
Total Emissions (Location Based)	347,662
Out of Scope Emissions	11,007

3. Subsequent Emissions Reporting

Table 2: First Bus previous year footprint

FY22: 1 st April 2021 – 31 st March 2022	
Emissions	Tonnes CO ₂ e
Scope 1	257,474
Scope 2 (Market based)	0
Scope 2 (Location based)	4096
Scope 3	
- Cat 5: Waste Generated in Operations	7,117
- Cat 6: Business Travel	
- Cat 7: Employee Commuting	
Total Emissions (Market Based)	264,591
Total Emissions (Location Based)	268,687
Out of Scope Emissions	21,338

Table 3: First Bus current year footprint

FY22: 1 st April 2022 – 31 st March 2023	
Emissions	Tonnes CO ₂ e
Scope 1	238,856
Scope 2 (Market based)	0
Scope 2 (Location based)	5,359
Scope 3	
- Cat 5: Waste Generated in Operations	7,998
- Cat 6: Business Travel	
- Cat 7: Employee Commuting	
Total Emissions (Market Based)	246,854
Total Emissions (Location Based)	252,213
Out of Scope Emissions	17,094



4. Carbon & sustainability targets

4.1. Target setting

First Bus has completed an emissions forecasting exercise based on its FY20 (2019/20) baseline year assessment.

There are four categories of carbon dioxide¹ reductions to consider whilst forecasting:

1. **Passive Reductions** – these are carbon reductions that would happen without any action needed by the company e.g. the decarbonisation of the electricity grid will gradually reduce the carbon emissions associated with the electricity you use and purchase
2. **Market-Based Reductions** – these are achieved by selecting and paying for energy tariffs that have lower emissions e.g. buying a green electricity tariff.
3. **Active Reductions** – these are achieved by making technological, behavioural and operational changes within the business. E.g. choosing to reduce the number of miles driven in cars; choosing to put a limit on the number of flights people make; investing in new technology to reduce energy consumption etc.
4. **External Reductions** – carbon **compensation/offsetting** to reduce emissions external to your own footprint to reduce your net emissions.

Figure 1 shows this recommended approach applied to First Bus's emissions to 2050. By taking the Active Market Based approach, **First Bus is committed to reducing its emissions over time to achieve Net Zero by 2045**. The difference between the passive and the active line highlights how First Bus aims to lead the Net Zero transition in the bus transport sector with its 'Zero Emission Mission 2035'.

The most significant **Passive Reductions** assume:

- Electricity Grid emissions will reduce linearly to zero by 2035 (which is the UK's target to achieve zero carbon emissions electricity grid). Note: the grid emissions have reduced by approximately 50% over the last 5-6 years on a tCO₂e per kWh basis.
- All buses operated by First Bus would be zero carbon by the year 2045 **if there was no uptake of government funding or capital expenditure by First Bus**. The phase out date of combustion engine buses is not stated in the UK Government Net Zero Transport plan, so this date has been assumed. The initial decrease of the passive line is gradual as the initial uptake of low carbon technologies is slow. The decrease becomes more aggressive from 2030 onwards as electric buses become more widely available and technology advances reducing range anxiety.

¹ Referred to as "carbon" or "CO₂"

The most significant **Active Reductions** assume:

- First Bus has committed to delivering a fully zero emission bus fleet by 2035. All electric vehicles charged at First Bus sites will be supplied with 100% renewable electricity (a mix of renewables on site and renewable energy from the grid).
- All-natural gas and gas oil heating systems will have been transferred to zero carbon alternatives (e.g heat pumps) by 2040.

The blue line shows First Bus’ actual progress towards its emission reduction targets.

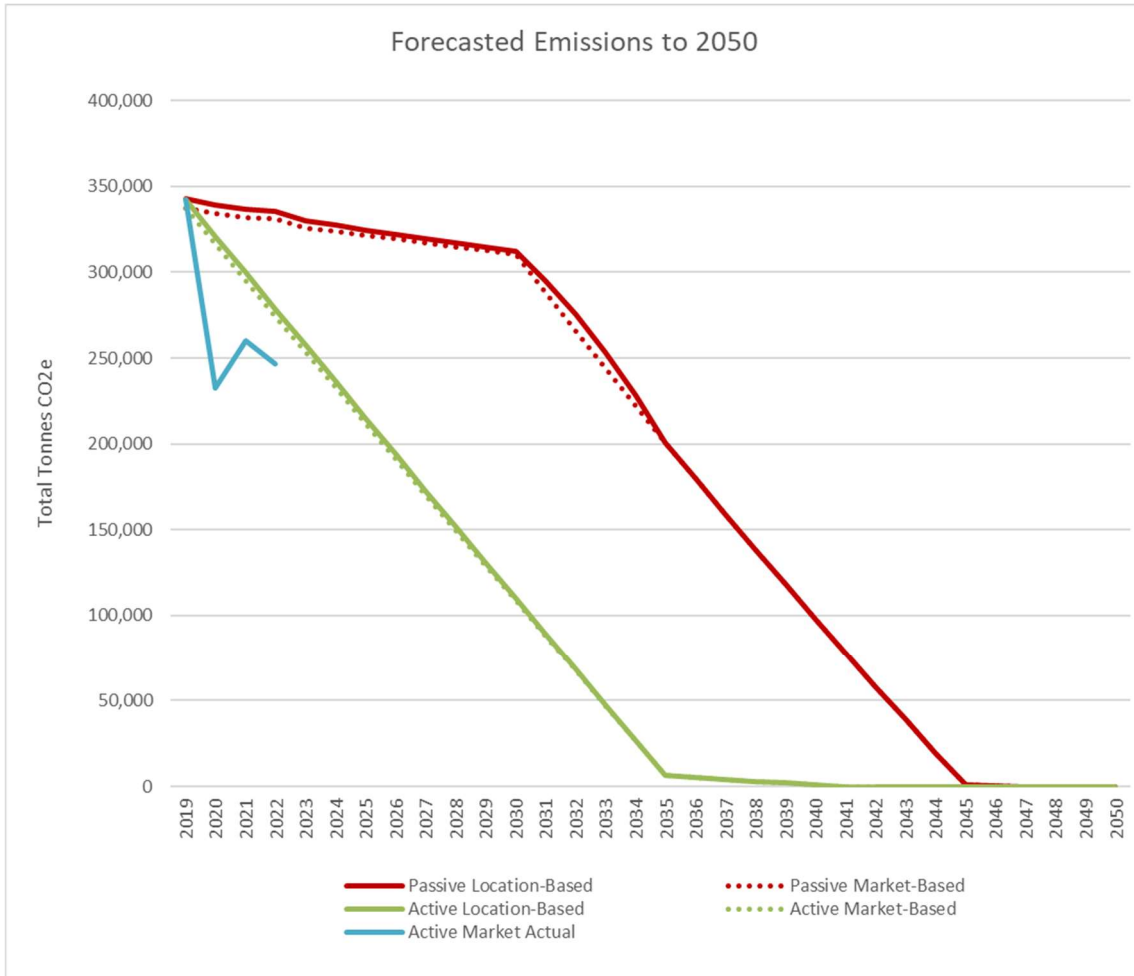


Figure 1: Emissions forecast for First Bus until 2050

4.2. The Fleet Transition

We continue our transition to a zero-emission fleet owing to further rounds of ZEBRA and ScotZEB funding, with 113 zero emission buses added in FY 2023, while old diesel buses are being permanently removed from service as they come to end of life. Overall, zero emission vehicles now make up 6.3% of our bus fleet excluding coaches, or 6.0% if including coaches in total fleet number – a significant increase from 3.3% last year. A further 364 EV's have also been secured for the future (Table 3).

Table 3: First Bus FY23 EV Roll Out Update

Depot	Operational	Secured
York	33	-
Hunslet Park, Leeds	21	-
Caledonia, Glasgow	150	
Scotstoun, Glasgow	-	50
Aberdeen	25 (Hydrogen) + 24 EV	-
Cymru	8	-
Leicester	14	72
Roundtree Way, Norwich	-	70
Hoeford, Portsmouth	-	62
York	-	53
Bramley, Leeds	-	57
Total	277	364

On top of the above government support, First Bus will also aim to fund the transition more independently, as battery technologies improve and the zero carbon options become more financially viable.

Figure 2 provides the First Bus forecasted carbon reduction.

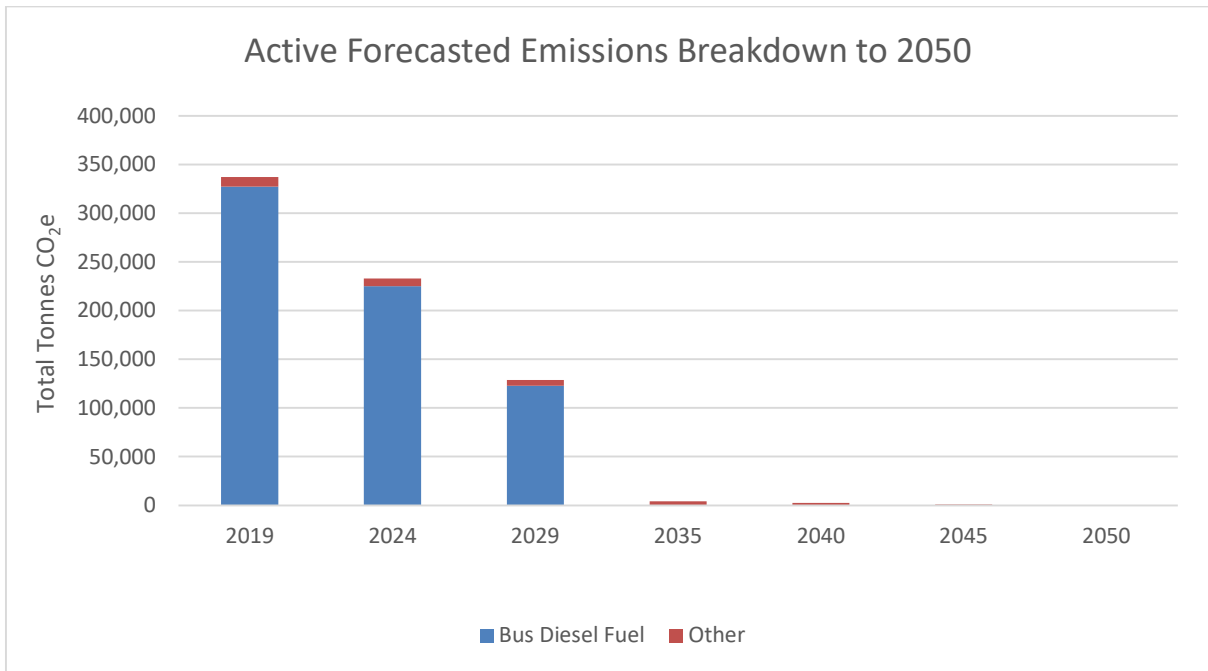


Figure 2: Emissions forecast for First Bus until 2050

For the purposes of Figure 2, the category ‘other’ includes all remaining scope 1 and 2 emissions, as well as business travel, waste, water, employee commuting and fuel consumed by First Travel Solutions. **There are no freight emissions included within the scope of this Carbon Reduction Plan as this is not relevant to the First Bus operation.**

4.3. Other Energy Reduction Measures

In 2023 First Bus completed phase 1 of its mission to make depots self-sustaining, investing £2.5m to install 6,000 solar photovoltaic (PV) panels across 20 depots. The PV panels are already enabling the depots to generate their own renewable power for depot lighting, heating, office functions and engineering bays – reducing costs, emissions and the depot’s need to draw power from the local grid. At peak output, we expect the panels to produce 2 million KWh of energy a year.

5. Declaration and Sign Off

This Carbon Reduction Plan has been completed in accordance with PPN 06/21 and associated guidance and reporting standard for Carbon Reduction Plans.

Emissions have been reported and recorded in accordance with the published reporting standard for Carbon Reduction Plans and the GHG Reporting Protocol corporate standard⁴ and uses the appropriate Government emission conversion factors for greenhouse gas company reporting⁵.

Scope 1 and Scope 2 emissions have been reported in accordance with SECR requirements, and the required subset of Scope 3 emissions have been reported in accordance with the published reporting standard for Carbon Reduction Plans and the Corporate Value Chain (Scope 3) Standard.

‘As leaders in sustainable mobility, we are fully aligned with the Government’s ambitions for a net-zero carbon transport system, including zero-emission bus fleets. We will continue to work closely with central and Local Government across the UK to support the delivery of our shared decarbonisation ambitions and commitments.’ Janette Bell, First Bus Managing Director.



Director Sign off: Isabel McAllister

Chief Sustainability & Compliance Officer

Date: 10th January 2024

6. References

1. BEIS GHG Conversion Factors for Company Reporting (2016-2021)
2. Carbon Footprint Ltd's Target Setting White Paper (2021)
3. Guidelines to Defra's Greenhouse Gas (GHG) Conversion Factors for Company Reporting – annexes (June 2013)
4. Science Based Targets Initiative (SBTi) (2021)
5. The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (March 2004)