2024 Carbon Reduction Plan

Bamford Bus Company Limited, trading as Wrightbus

Publication date: **01/07/2024**

Prepared in accordance to PPN 06/21

1. Commitment to achieving Net Zero

Bamford Bus Company Limited, trading as Wrightbus is committed to achieving net zero greenhouse gas (GHG) emissions by 2050, but preferably earlier.

Our Carbon Reduction Plan has been devised by our Carbon Reduction Committee, which represents diverse areas of the business including Senior Management, Health, Safety & Environment, Engineering, Business Development, All Service One (aftermarket parts & service), Manufacturing, and Strategic Purchasing. It is the responsibility of the committee to:

- ✓ Meet our legal and moral obligations,
- ✓ Understand our current carbon footprint in all areas of the business,
- ✓ Set out a plan to reduce our carbon footprint & offset where we cannot reduce,
- ✓ Engage the whole workforce to play a part in the journey,
- ✓ Define changes we need to make to deliver reduction and offset,
- ✓ Clearly communicate our intentions and what we have delivered.

Bamford Bus Company Ltd's Carbon Reduction Plan has three core targets:

Target 1	**Reduce scope 1 & 2 greenhouse gas emissions for every bus we produce by at least 50% by 2030 compared to base year of 2021.**
Target 2	**Implement processes to measure and reduce our scope 3 greenhouse gas emissions.**
Target 3	**Achieve net-zero greenhouse gas emissions by 2050, but preferably earlier.**

2. Baseline GHG Emissions Footprint

Scope 1, 2 & 3 GHG emissions are calculated for our baseline year of 2021 (Table 1).
Please note that we have recalculated our baseline emissions footprint by including additional factory heating GHG emissions in Scope 1 emissions and reallocating Scope 3 into the correct reporting category. The overall impact is a 6.3% increase on total GHG emissions reported in previous year's publications.

Table 1 2021 Baseline GHG Emissions (Scope 1, 2 & 3).

Baseline Year: 2021 (01/01/21 – 31/12/21 inclusive)	
Emissions Category	**Total Emissions (tCO_2e)**
Scope 1	2,108.8
Scope 2	1,396.4
Scope 3 (See breakdown below. Appendix A details the calculation methodology)	3,077.4
Category 4 - Upstream transportation & distribution	2,308.8
Category 5 - Waste generated in operations	94.4
Category 6 - Business travel	104.3
Category 7 - Employee commuting	271.2
Category 9 - Downstream transportation & distribution	*298.7*
Total Emissions	**6,582.7**

Additional Details relating to the Baseline Emissions calculations.

- 2021 baseline selected as first full year in operation as Bamford Bus Company Ltd with sufficient data for emissions calculations.
- In accordance with the GHG Protocol's Corporate Standard[1], carbon emissions within our operational boundary have calculated on the basis of activities in which Bamford Bus Company Ltd has operational control over within the UK.
- Scope 1 GHG emissions (direct) are from activities owned or controlled by Bamford Bus Company Ltd including emissions from combustion in owned or controlled boilers, furnaces and vehicles, i.e., natural gas, diesel, heating oil, etc.
- Scope 2 GHG emissions (energy indirect) are released into the atmosphere from the generation of electricity consumed by Bamford Bus Company Ltd.
- Scope 3 GHG emissions (other indirect) are a consequence of Bamford Bus Company Ltd actions the occur at sources outside of our control.

3. Current GHG Emissions Reporting

- Total Scope 1, 2 & 3 GHG emissions have increased by 24.5% from the baseline year 2021.
- From 2021 to 2023, Bamford Bus Company Ltd has experienced significant growth; a 122% increase in production volumes, increasing line capacity to 20 units/week and a 554% increase in employee headcount. Hence, our targets are based on tCO_2e per bus (see Section 4).
- Please note that we have recalculated 2021/22 emissions by including additional factory heating emissions in Scope 1 and reallocating Scope 3 - Category 9 emissions to Category 4. The overall impact is a 6.3% increase on total GHG emissions reported in previous publications.

Table 2 *Reported GHG Emissions (Scope 1, 2 & 3) since baseline year.*

Emissions Category	Total Emissions (tCO_2e)			% change from previous year	% change from baseline year
	2021 (Baseline)	2022	2023 (current reporting year)		
Scope 1	2,108.8	2,923.8	2,661.2	-9.0%	+26.2%
Scope 2	1,396.4	0.0	0.0	0.0%	-100.0%
Scope 3 (See breakdown below. Appendix A details the calculation methodology)	3,077.4	4,292.8	5,544.6	+29.2%	+80.2%
Category 4 - Upstream transportation & distribution	2,308.8	2,302.6	*1,843.9*	-19.9%	-20.1%
Category 5 - Waste generated in operations	94.4	121.5	*231.4*	+90.5%	+145.1%
Category 6 - Business travel	104.3	312.9	*1,046.0*	+234.3%	+902.9%
Category 7 - Employee commuting	271.2	898.2	*1,168.1*	+30.0%	+330.7%
Category 9 - Downstream transportation & distribution	298.7	*657.7*	*1,255.1*	+90.8%	+320.2%
Total Emissions	6,582.7	**7,216.6**	**8,194.1**	+13.5%	+24.5%

4. Progress Against Targets

4.1 Target 1

Target 1	**Reduce scope 1 & 2 greenhouse gas emissions for every bus we produce by at least 50% by 2030 compared to base year of 2021.**

Scope 1 & 2 GHG emissions reductions against targets are shown in Figure 1. **We have already achieved this target 7 years ahead of schedule; in 2023 our scope 1 and 2 GHG emissions per bus produced was 4.2 tCO_2e, a 66% reduction from the baseline.**

Enablers:

- ✓ Switching electricity consumption to a Green Energy tariff, effectively eliminating all scope 2 GHG emissions.
- ✓ Reducing our reliance on gas oil heating and switching to natural gas.
- ✓ Improvement in production efficiencies and implementation of energy reduction schemes, e.g. engineering controls on air handing units for factory heating.
- ✓ Increase in production share of zero-emission battery-electric and hydrogen fuel-cell buses, reducing the need for diesel fuel used for pre-delivery inspection test drives.

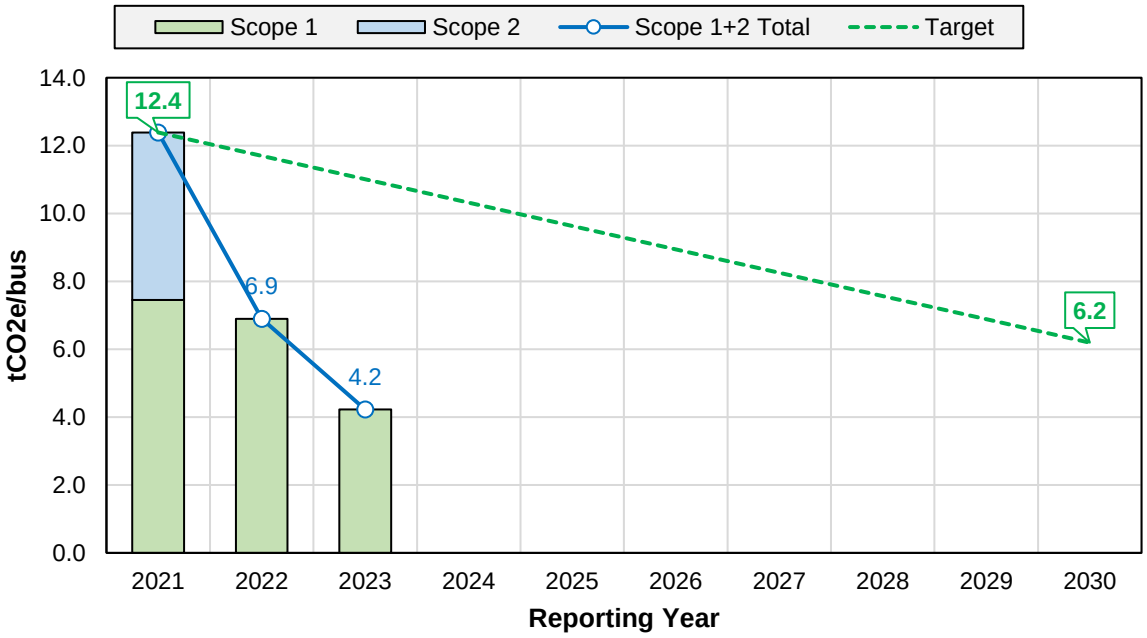


Figure 1 – Progress against Target 1.

4.2 Target 2

Target 2	**Implement processes to measure and reduce our scope 3 greenhouse gas emissions.**

We intend to expand our in-house Carbon Calculation Tool to include further scope 3 categories and understand, holistically, the indirect impact of producing zero-emission buses.

Upstream Scope 3 Emissions not yet reported on:

Category 1 - Purchased goods and services

Category 2 - Capital goods

Category 3 - Fuel and energy related activities (not inc. in scope 1 & 2)

Category 8 - Upstream leased assets

For categories 1 & 2, in collaboration with the Wright Technology & Research Centre (W-Tech) at the Queen's University, Belfast and several of our Tier 1 suppliers, we are undertaking life-cycle assessment studies to fully quantify the environmental impact, including cradle-to-gate GHG emissions, of our products. Our Engineering and Strategic Purchasing teams consider the materials used to build our vehicles and the impact they have on the environment, including but not limited to:

- Aluminium lightweight body structure - arguably the most sustainable building material in the world and is also highly recyclable.
- Steel chassis frame - steel is a uniquely sustainable material because once it is made it can be used, as steel, for ever. Steel is infinitely recycled.
- Timber flooring - Sustainable timber has the lowest embodied energy (energy used in its processing, production and transport, from tree to consumer use).
- Windows - Glass is a sustainable, fully recyclable material which provides great environmental benefits such as contributing to mitigating climate change and saving precious natural resources.
- Front & rear body domes and interior fibreglass - Fiberglass is a lightweight choice for energy-efficient transport solutions. Recycled fibreglass has also been identified as a material in second-life applications to improve concrete strength whilst reducing carbon footprint. We are investigating the feasibility of using locally sourced natural fibres to replace a significant proportion of the glass fibres in GFRP components to increase the product sustainability and reduce our carbon footprint.

We also consider the following when sourcing materials:

- ✓ Source materials more locally to decrease transportation emissions and costs.
- ✓ Use reclaimed, post-industrial grades of plastic instead of virgin materials when possible.
- ✓ Reduce the amount of material needed through part design. This light-weighting further improves energy efficiency of our vehicles.
- ✓ When possible, select a compostable plastic.
- ✓ Select minimalistic packaging made from material that can be or have already been recycled or reclaimed.

For category 3, we intend to include "well-to-tank" emissions for purchased fuels and electricity (including any transmission and distribution losses).

Category 8 is not currently applicable, but we will continue to monitor and report if necessary,

Downstream Scope 3 Emissions not yet reported on:

Category 10 – Processing of sold products

Category 11 – Use of sold products

Category 12 – End-of-life treatment of sold products

Category 13 – Downstream leasing franchises

Category 14 – Franchises

Category 15 - Investments

Category 10 is not applicable – there are no further or intermediate "processing, transformation or inclusion of another product" for our buses before delivery to the customer.

For Category 11, the energy consumption of our buses can be monitored via our in-house telematics platforms (or requesting customer's data where this is unavailable). As they majority of our products are zero-emissions at the point of use, indirect emissions will be zero. We will continue to monitor and report if necessary,

Category 12 is currently not applicable – buses typically have a 15 year design life. As Bamford Bus Company Ltd was formed in 2019, none of our products have yet reached "end of life". We will continue to monitor and report if necessary,

Categories 13, 14 & 15 are not currently applicable, but we will continue to monitor and report if necessary.

4.3 Target 3

Target 3	**Achieve net-zero greenhouse gas emissions by 2050, but preferably earlier.**

Scope 1, 2 & 3 GHG emissions reductions against targets are shown in Figure 2.

In 2023 our total GHG emissions per bus produced was 13.0 tCO_2e, a 44% reduction from the baseline.

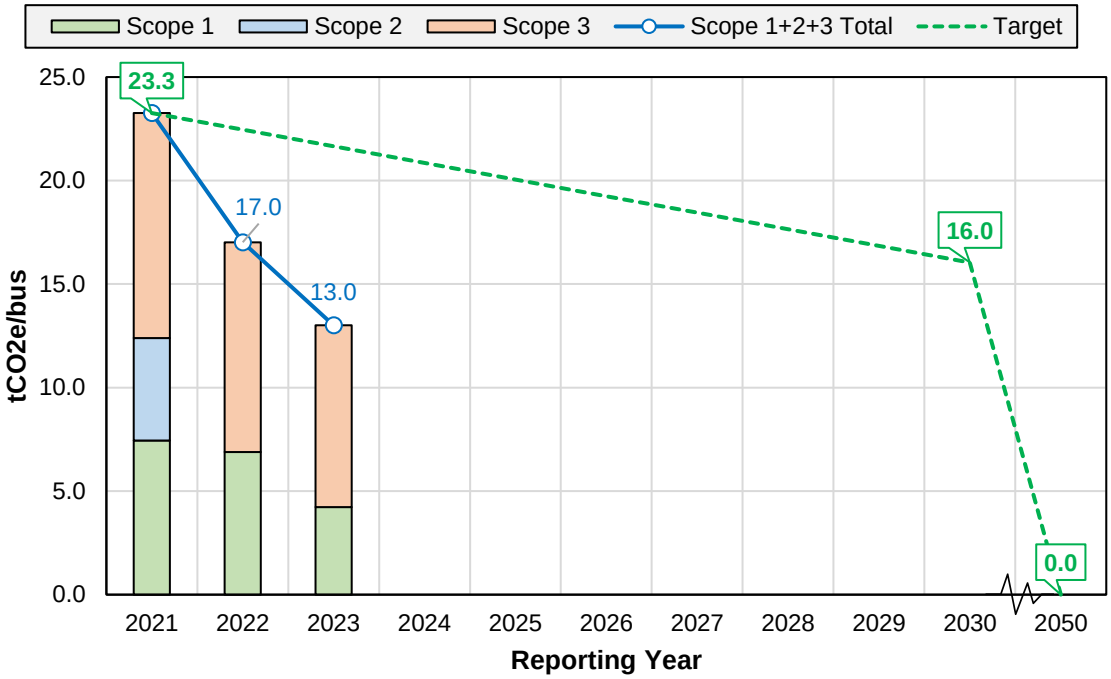


Figure 2 – Progress against Target 3.

5. Carbon Reduction Projects

5.1 Completed Carbon Reduction Initiatives

✓ Wrightbus have had a robust internally tailored Environmental Management System for many years, but in 2022 we decided to get our EMS certified to internationally recognised standard BS EN ISO14001:2015. The company felt that gaining this formal certification would assist us on our journey to reduce carbon emissions by raising awareness of environmental aspects of our business including our commitment to reach Net Zero by 2050.

Having a recognised EMS helps our business to monitor, control and improve our overall environmental performance and responsibilities.

- ✓ Members of the Carbon Reduction Committee, along with several SMEs in our supply chain have undertaken Carbon Literacy training with Business in the Community NI (BitCNI), helping to ensure we are all knowledgeable in the steps we can collectively take to reduce our impact on the environment. This knowledge will then be imparted within our own departments and to our customers.
- ✓ From January 2022, we have switched to a green energy tariff and pursuing credentials to ensure all electricity supplied to site is from local, renewable sources with zero CO_2e emissions at the source.
- ✓ Replacing old inefficient twin fluorescent tube lighting with LED lights that have integrated wireless PIR and photocell controls. We have completed this in three of our factories and intend to progress to more areas in the coming years.
- ✓ Waste management improvement scheme (Reduce, Reuse, Recycle) - all onsite waste is collected by a trusted outside contractors and taken to their materials recovery facility for responsible sorting and reprocessing at specialist factories.

5.2 Future Carbon Reduction Initiatives

In the future we hope to implement further measures such as:

- ► Continuing the rollout of smart LEDs to reduce energy demand across our sites.
- ► Introducing on-site sustainable electricity generation (i.e. solar panels).
- ► Install high efficiency compressors to reduce electricity demand for our air tools.
- ► Investigate alternative factory heating solutions.
- ► Implementing automatic engineering controls on air handing units for factory heating.
- ► Switching all diesel-powered company vehicles to electric and collaborating with our supply chain and EV depots across the UK to avail of shared charging infrastructure.
- ► On-site or co-located generation of H_2 fuel via an electrolyser, powered by low/zero-emission electricity (subject to planning permission).

6. Declaration and Sign Off

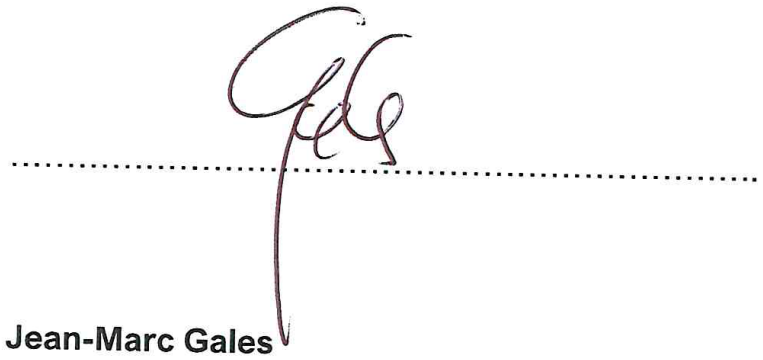
This Carbon Reduction Plan has been completed in accordance with PPN 06/21 and associated guidance and reporting standard for Carbon Reduction Plans.

Emissions have been reported and recorded in accordance with the published reporting standard for Carbon Reduction Plans and the GHG Reporting Protocol corporate standard[1] and uses the appropriate Government emission conversion factors for greenhouse gas company reporting[2].

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[3].

This Carbon Reduction Plan has been reviewed and signed off by the board of directors (or equivalent management body).

Signed on behalf of the Supplier:



Jean-Marc Gales
Chief Executive Officer
Bamford Bus Company Ltd. trading as Wrightbus

[1] https://ghgprotocol.org/corporate-standard
[2] https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting
[3] https://ghgprotocol.org/standards/scope-3-standard

Appendix A – Scope 3 Calculation Methodology

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[3].

Scope 3 Category	Name	Methodology
4	Upstream transportation & distribution	Spend based method
5	Waste generated in operations	Waste type specific method
6	Business travel	Mix of distance & spend based methods
7	Employee commuting	Average data method
9	Downstream transportation & distribution	Spend based method

Appendix B – Green Energy Certificate