



Carbon Emissions Calculation Report

April 2021 – March 2022

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Environment & Sustainability





Carbon Emissions Report

Executive Summary

The purpose of this report is to provide Cheshire Fire and Rescue Services with update of progress against the organisations carbon emissions reduction target.

The baseline set against the organisations carbon emissions in 2017¹.

The 2020/21 carbon report detailed a reduction of 59% from a base-line figure from 2017.

The report focuses on reduction within Cheshire Fire and Rescue Services premises and vehicles fleets.

This report utilises a combination of building energy consumption data, fleet vehicle fuel consumption records and finance data as recorded by Cheshire Fire and Rescue Service. All the consumption data provided was verifiable to the source. There was no use of estimated data in the 2021/22 period.

The baseline carbon emissions from 2017/18 were confirmed at 2,057 Tonnes CO₂e on the Fire Service Carbon Emissions Report 2017-18

The normalised carbon emissions from 2021/22 were calculated at 835 Tonnes CO₂e.

The reduction in carbon emissions from baseline levels is therefore 1,222 Tonnes CO₂e.

This represents a 53% reduction from baseline.

Government expectations of public bodies was to achieve a reduction of 30% by 2020. Cheshire Fire and Rescue Service did set a target of a reduction of 40% by 2020 from a baseline in 2009 and this was achieved.

There is a future Government expectation of achieving 50% reduction in Carbon Emissions by 2032. Government focus on this will evolve because of the focus on Carbon Emissions and the Climate Change net zero commitments nationally by 2050.

We have set aspirational goals to achieve 60% reduction by 2025 and 80% reduction by 2030 and this focus will be led by the Environment and Climate Change Strategy 2020 to 2025 and the Environment and Sustainability Working Group initiative set up in 2021.

Key Milestones from current government policy must be considered in strategic decisions.

- Reduction of national emissions by 78% by 2035 from 1990 levels is now enshrined in UK Law – Carbon Budget Order 2021.
- Sale of petrol/diesel and fossil fueled vehicles ceases in 2030.
- Public Authority emissions cut by 50% by 2032 from a base-line of 2017 emissions.

¹ This is change from the previous base-line of 2009 due to government changes in recording emissions reductions.





Carbon Emissions Report

1 Background

In 2008, Cheshire Fire and Rescue Service joined the Carbon Trust Local Authority Carbon Management Scheme to develop a Carbon Management Plan designed to reduce the service carbon emissions.

To achieve this reduction target, a range of carbon abatement schemes were developed to reduce carbon emissions from Fire Service premises and its vehicle fleet.

Since 2017 Cheshire Fire and Rescue Service have engaged ESOS Energy to review and verify its annual carbon emissions and for the fiscal year of 21/22 provided a progress update report. This data will be used to track performance against target, and to develop further carbon reduction strategies.

2 Carbon Emission Performance

2.1 Overview

ESOS Energy have completed a carbon emission verification covering all building energy consumption carbon emissions (gas, electricity etc) and all fleet vehicle carbon emissions (petrol, diesel etc) for the year 2021/22.

Building energy consumption data and fleet mileage data was provided by Cheshire Fire & Rescue Service and was processed, analysed, and reported by ESOS Energy. The accuracy of the calculation relied on collating consumption data for all the emission sources. For gas and electricity, data was provided in kilowatt hours (kWh) from meter readings or bills.

Fleet and transport emissions, this was provided by fuel type.

Since April 2020, Cheshire Fire and Rescue Service has been supplied by 100% renewable electricity from their providers Total Gas and Power. Please see Appendix A for Pure Green Certification.

Fuel Type	kgCO ₂ e
Natural Gas	0.185
Electricity	0.000
Burning Oil	0.247
LPG	0.214
Diesel Miles	0.271
Petrol Miles	0.281
Diesel Litres	2.546
Petrol Litres	2.168

The carbon emissions are calculated using the activity data collated multiplied by standard emissions factors. Conversion of energy and mileage data to tCO₂e was conducted using, **Greenhouse gas reporting: conversion factors 2020**





Carbon Emissions Report

2.2 Results Building Stock

The table below summarises the Fire Service building stock carbon emissions:

Summary of Building Stock 2021-2022		
Fuel	kWh	Tonnes CO ₂ e
Natural Gas	3,034,201	560
Electricity	2,120,376	0*
Oil	0	0
TOTAL		560

*The Zero CO₂e figure is a direct result of moving to a renewable power supply.

2.3 Results Red Vehicle Fleet

The table below summarises the Fire Service vehicle fleet carbon emissions:

Summary of Vehicle Fleet 2021-22		
Fuel	Total Miles	Tonnes CO ₂ e
Unleaded	23,404	7
Diesel	1,175,417	319
TOTAL	1,198,822	241

2.4 Results Grey Vehicle Fleet

The table below summarises the Fire Service vehicle fleet carbon emissions:

Summary of Vehicle Fleet 2021-22		
Fuel	Total Litres	Tonnes CO ₂ e
Unleaded	7,968	17
Diesel	23,418	60
TOTAL	31,386	77





Carbon Emissions Report

2.5 Current Performance Against Baseline

The table below summarises Cheshire Fire and Rescue Service performance for the year 2021/22 against the baseline year of 2017/18:

Year	Carbon Emissions (Tonnes CO ₂ e)	Variation %
2017/18	2,057	-
2018/19	2,056	-0%
2019/20	1,754	-15%
2020/21	835	-59%
2021/22	962	-53%

2.6 Historic Performance (For Reference Only)

The table below details the historic performance from the baseline of 2009 and the progress made before the change in guidelines by central government.

Year	Carbon Emissions (Tonnes CO ₂ e)	Variation %
2010/11	2,862	-3.6%
2011/12	2,734	-7.9%
2012/13	2,479	-16.5%
2013/14	No Data	No Data
2014/15	No Data	No Data
2016/17	2,164	-27%
2017/18	2,057	-31%
2018/19	2,056	-31%
2019/20	1,754	-41%

2.7 Conclusion

The reduction in carbon emissions from baseline levels is 1,095 Tonnes CO₂e. This represents a 53% reduction from baseline, which is an average reduction of 273 Tonnes per annum.

Cheshire Fire and Rescue Service has increased carbon emissions by 127 Tonnes CO₂e since the previous year's assessment in 2020/21. This is around a 15% increase in emissions from the previous year.

There have been slight increases in building carbon emissions, but the main reason for the increase is due to vehicle usage emissions.



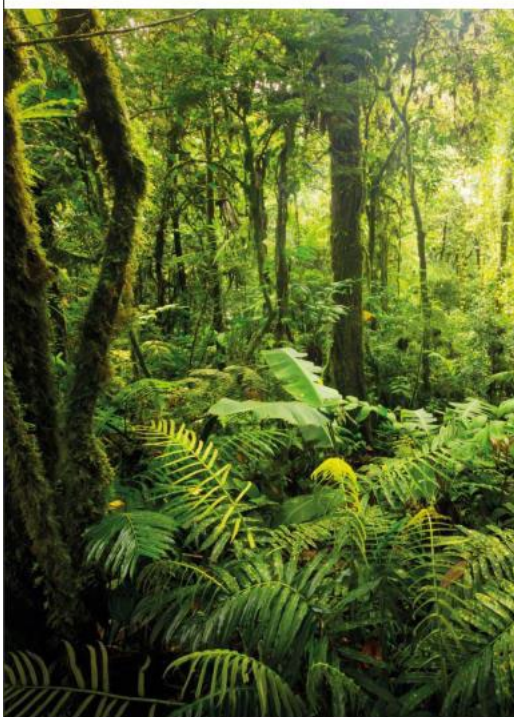


Carbon Emissions Report

CFRS need to continue to implement carbon abatement schemes – with a particular focus on vehicle emissions.

Cheshire Fire and Rescue Service is still on track to meet its aspirations and targets in terms of carbon emissions. Some of the investments in environmental improvements as part of the modernisation project will filter fully into this fiscal year carbon reporting.

Appendix 1



Pure Green Supply Certificate

This is to certify that

Cheshire Fire and Rescue

Uses electricity that is **100%** generated from
wind, solar and hydro sources

Supply Period 01/04/2022 – 31/03/2023

Signed *Mark Rose*

Mark Rose, Director, Sales & Marketing
on behalf of **TotalEnergies Gas & Power**

business.totalenergies.uk

Date 18/08/2022



Our independent assurance report was created by Deloitte and assures whether the renewable electricity supplied by TotalEnergies under our Pure Green product is backed by relevant Renewable Energy Guarantees of Origin (REGOs) certificates from solar, wind, solar and hydroelectric generation sources. This means that your electricity usage can be reported as zero carbon under a market-based emissions reporting approach in accordance with Greenhouse Gas Protocol Scope 2 Reporting Guidance.

