

## Carbon Footprint Target Setting for Salisbury City Council

Based on data from Assessment Period:  
1<sup>st</sup> April 2021 – 31<sup>st</sup> March 2022

## Executive Summary

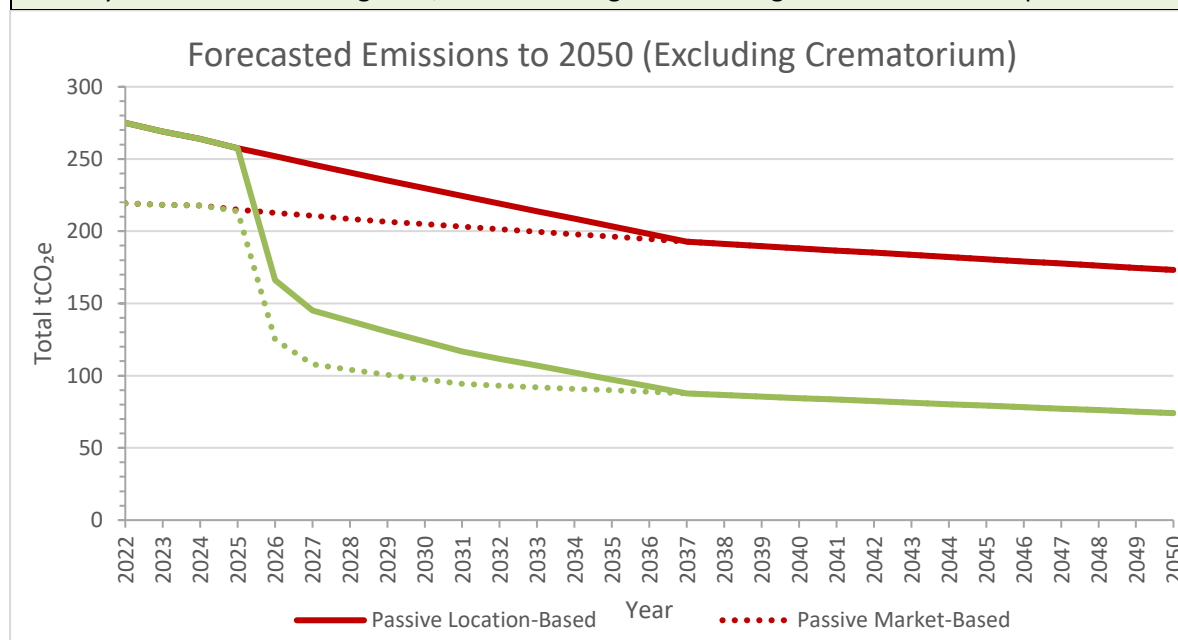
Carbon Footprint Ltd has completed a forecast of the greenhouse gas (GHG) emissions of Salisbury City Council until 2050 based on a dataset provided by the company for the period 1<sup>st</sup> April 2021 to 31<sup>st</sup> March 2022.

### Key Outcomes

- Baseline absolute location- and market-based emissions are 489.20 tCO<sub>2</sub>e and 427.98 tCO<sub>2</sub>e respectively.
- Natural gas at the crematorium accounts for a large proportion of emissions but due to the nature of the activity, it is unlikely this will be reduced over time. As such, targets modelled including & excluding the crematorium are shown within the report.
- Salisbury City Council should aim to reduce total absolute market-based emissions 36.4% by 2030.
- In the long-term, Salisbury City Council should aim to reduce total absolute market-based emissions by 62.9% by 2050.

### Recommendations

- Ensure all sites (including the new depot) are on 100% renewable electricity tariffs going forward to reduce market-based emissions.
- Replace natural gas heating at the amenity block to a heat pump system, powered by 100% renewable electricity by the end of 2025.
- Replace fossil fuel vehicles with electric vehicles gradually by 2030.
- Ensure waste is diverted from landfill by 2025 (e.g. via waste to energy incineration) to reduce associated emissions.
- Ensure the cost of offsetting is considered when considering feasibility of capital investments in energy reduction going forward. It is likely that Salisbury City Council will have to utilise offsetting by 2030 to reach its Carbon Neutral goal. However, the overall aim to reduce emissions as far as possible within the council’s value chain with carbon offsetting providing beyond value chain mitigation, with offsetting used to mitigate when this is not possible.



# Table of Contents

Executive Summary.....2

1. Carbon & sustainability targets .....4

2. Summary of Target Setting Recommendations .....7

3. References .....8

## Quality Control

**Report issue number:** 1.0  
**Date:** 21 April 2023

**Calculations completed by:** Zoe Booth  
**Calculations reviewed by:** Myles Howard

**Report produced by:** Zoe Booth  
**Report reviewed by:** Myles Howard

**Director approval:** Dr Wendy Buckley



# 1. Carbon & sustainability targets

## 1.1. Target setting

Salisbury City Council declared a Climate Change Emergency in June 2019 and has a target to become Carbon Neutral by 2030. Within this report, emissions have therefore been shown/modelled on an absolute basis, rather than by intensity metric. This will enable Salisbury City Council to better plan for the actions and investments needed to reach Carbon Neutral by the 2030 period.

There are four categories of carbon dioxide<sup>1</sup> reductions to consider whilst setting targets:

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 **mitigation /offsetting** (also known as Beyond Value Chain Mitigation) to reduce emissions external to your own footprint to reduce your own net emissions.

Figure 1 shows this recommended approach applied to Salisbury City Council's emissions to 2050. This includes natural gas use at the crematorium site. Whilst the crematorium cannot be excluded from the GHG emissions boundary for Salisbury City Council, the natural gas emissions are unlikely to change in the near-term due to the nature of the activities undertaken on site. As such, no change in emissions has been modelled. As the crematorium's natural gas emissions are a significant proportion of the Council's emissions, a version of the model which excludes the Crematorium has also been produced (Figure 2) to ensure the emissions do not dwarf the positive reduction actions that Salisbury City Council strive towards in other areas.

The **Passive Reductions** are calculated on the following basis:

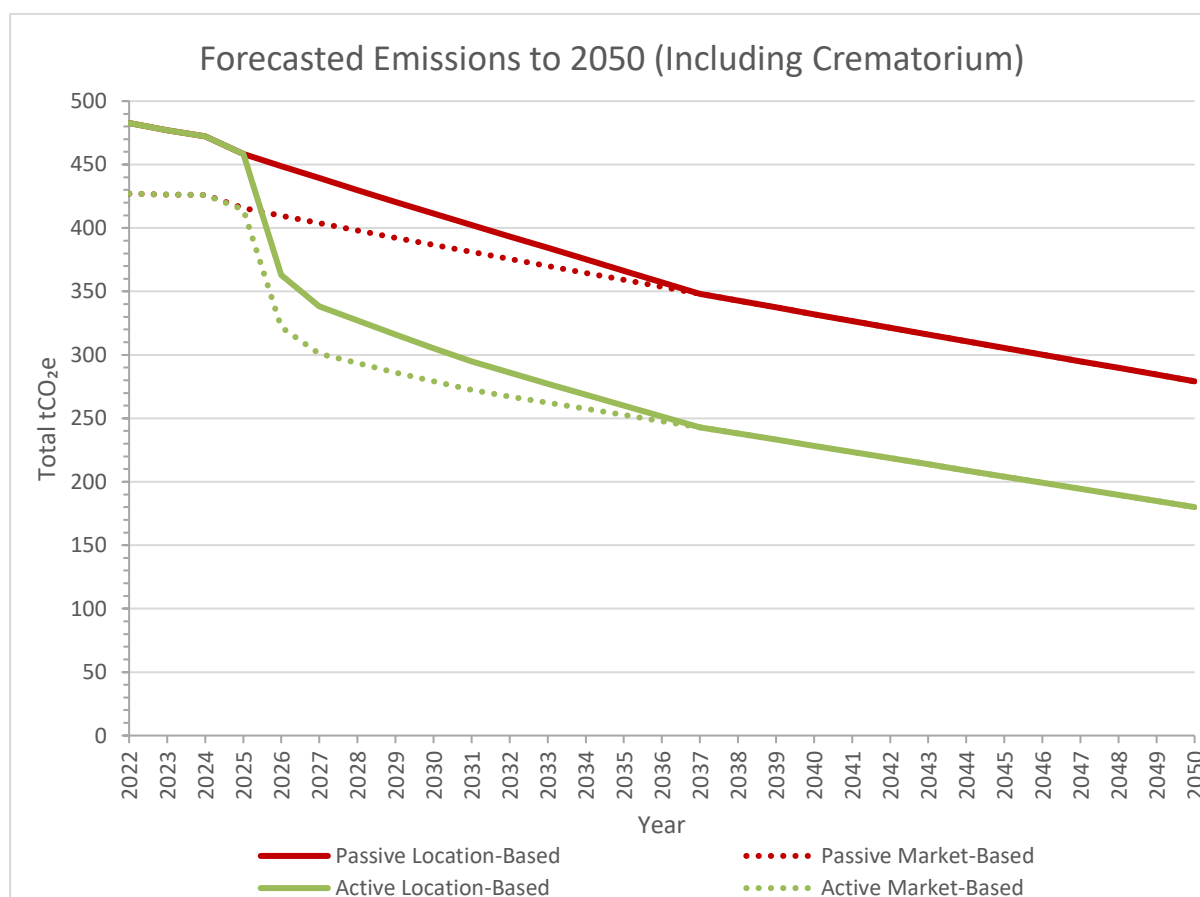
- For electricity, there is an assumption that the national grid will be carbon neutral by 2035, in line with UK government targets.
- All remaining emission sources are modelled using an extrapolation of the average reduction trends from the previous five years. Reductions are typically a result of industries decarbonising or enhanced efficiency of technologies over time. For example, cleaner combustion vehicles with enhanced efficiency.

---

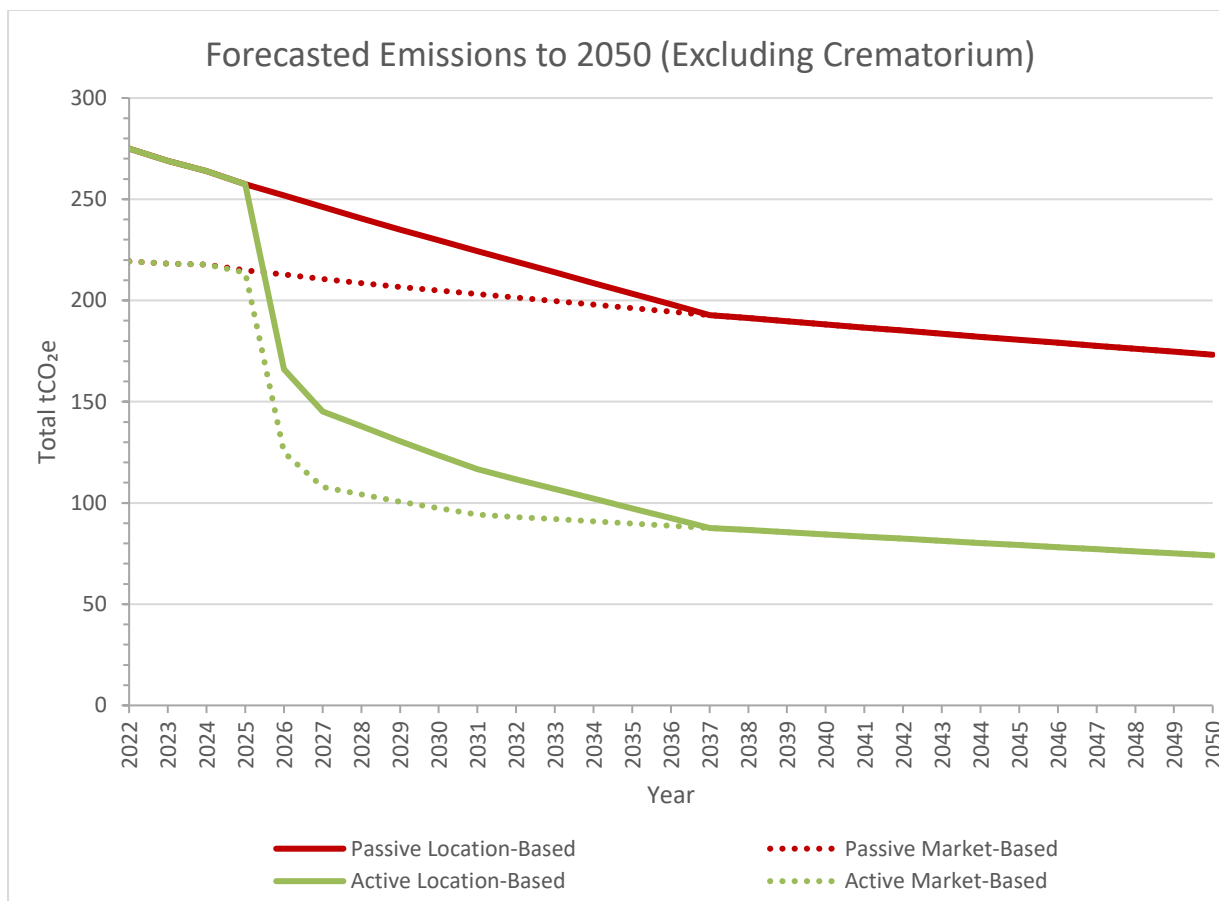
<sup>1</sup> Referred to as "carbon" or "CO<sub>2</sub>"

The **Active Reductions** are calculated based on the following assumptions:

- Unit 12 Netherhampton Road (depot) is currently the only site that is not on a 100% renewable tariff for electricity. Salisbury City Council will be moving depot in 2023 and will switch to a renewable tariff as part of the move. Thus market-based emissions are reduced to 0 tCO<sub>2</sub>e from 2024 onwards.
- A switch from natural gas heating at the amenities block (for showers) will be switched to a heat pump system. A firm date for this was not in place at the time of modelling. To ensure a reasonable time to implement this plan, results have been modelled to show the switch at the end of 2025. It is also assumed that the electricity used to power the heat pumps will be sourced from a renewable tariff (or on-site renewables) in line with Salisbury City Council's other sites.
- Three transit vans will be replaced by EV vehicles in 2024, which are currently on order.
- Remaining vans (including tippers) will be replaced by EVs from 2025 onwards at a rate of 1 vehicle per year.
- All waste that is from the Council's operations or from public waste bins (i.e. park bins collected by the Council) will be diverted from landfill by 2025. The Council already recycles waste where it can and has recently added recycling bins to its parks. However, residual waste that can't be recycled could still be diverted from landfill via incineration (e.g. waste to energy plants).



**Figure 1: Emissions forecast for Salisbury City Council until 2050, including the Crematorium.**



**Figure 2: Emissions forecast for Salisbury City Council until 2050, excluding the Crematorium.**

Figures 1 and 2 provide simulations that are designed to be best and worst-case scenarios. However, it is impossible to predict the future with 100% accuracy. The area between the passive and active lines represents emissions that could be saved and should be used by Salisbury City Council to set interim reduction targets as it works towards its Carbon Neutral by 2030 goal.

All targets set should be reviewed regularly (e.g. on an annual basis) and amended accordingly (i.e. target increased if it is met ahead of schedule). This will prevent complacency if the target set was too conservative from the onset. An action plan should be developed to set out how the targets will be met and an employee should be allocated the responsibility for carrying out the plan.

Whilst the passive and active scenarios both show reductions, the increased reductions seen in the active scenarios should be aimed for to reduce overall impact upon the environment, as well as the reliance on offsetting to reach a Carbon Neutral status. Due to the number of organisations that have now set carbon neutral or SBTi net zero targets, it is possible that the demand (and therefore cost) of offsetting credits will increase as we near 2040-2050. This is something that the Council takes into consideration when looking at capital investments in energy reductions as higher residual emissions will mean a higher offsetting requirement long term.

## 2. Summary of Target Setting Recommendations

In summary we recommend Salisbury City Council set the following targets:

- Ensure that the new depot (replacing Unit 12 Netherhampton Road) will be on a 100% renewable energy tariff.
- By the end of 2025, switch the amenity block natural gas to heat pumps – to be powered by 100% renewable tariffs or on-site renewable generation to reduce emissions associated with natural gas use.
- Replace current vans with EVs as planned by 2030. Due to lag times on orders this may be challenging and so we recommend ordering early to ensure this is achievable. For vehicles that are unable to be switched to EVs as currently planned (e.g. due to reduced specification after point of order), the Council should review the target setting and aim to replace them with low emission vehicles instead (e.g. hybrids).
- By the end of 2025, ensure that your waste provider diverts residual waste from landfill to reduce associated emissions.

It should also be noted that the Council are looking into a number of activities to reduce emissions but due to a lack data, and uncertainty around budget and timelines at the time of modelling, it was not possible to model these. We recommend carrying out this target setting activity at least once every five years to ensure the Council is on track to achieve its goals, as well as adapt for any changes to reduction plans. These activities include:

- Increasing roof insulation at the Crematorium to reduce the need for space heating.
- Decarbonisation of space heating at all sites that currently use natural gas. Whilst no set plans are currently proposed, this will likely be via a switch to electric radiators or alternatives such as heat pumps.
- Investigation of new tools being battery operated (such as movers), although this will be dependent on capabilities of current electric replacements.
- Investigating the feasibility of energy audits across sites.

### 3. References

1. BEIS GHG Conversion Factors for Company Reporting (2016-2022)
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. The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (March 2004)