

Annex 2 - External Reviews

1. During 2022-23, external consultants were commissioned to review a number of aspects of the Environmental Sustainability Strategy (ES Strategy), and in particular the work to deliver net zero carbon by 2030.

Baseline Validation Report

2. The Baseline Validation Report by Optopia was finalised in June 2022. It reviewed and validated the data used to create the carbon baseline of 2019/20 and the data for the first year of reporting 2020/21. The report found the data was substantially correct, with only minor adjustments of less than 1% required. The adjustments increased the baseline carbon footprint to 2,069t CO_{2e} (including 33t CO_{2e} of Scope 3 emissions from the transmission and distribution (T&D) of purchased electricity) and the 2020/21 footprint to 1,885t CO_{2e} (including 30 tCO_{2e} of Scope 3 T&D).
3. The report also included recommendations for future data analysis, including producing a written process, and observed that boundaries for the scope of the carbon footprint had not been documented.
4. Responding to the report - The observations from the report have been incorporated into the carbon footprint calculation for last year and this year and will be taken forward for future years. It is proposed to include the boundaries for the scope of the carbon footprint into the ES Strategy during the Strategy Review. It is also proposed to develop a process for data collection, storage and analysis as part of the work on collecting Scope 3 data.

Building Energy Audits

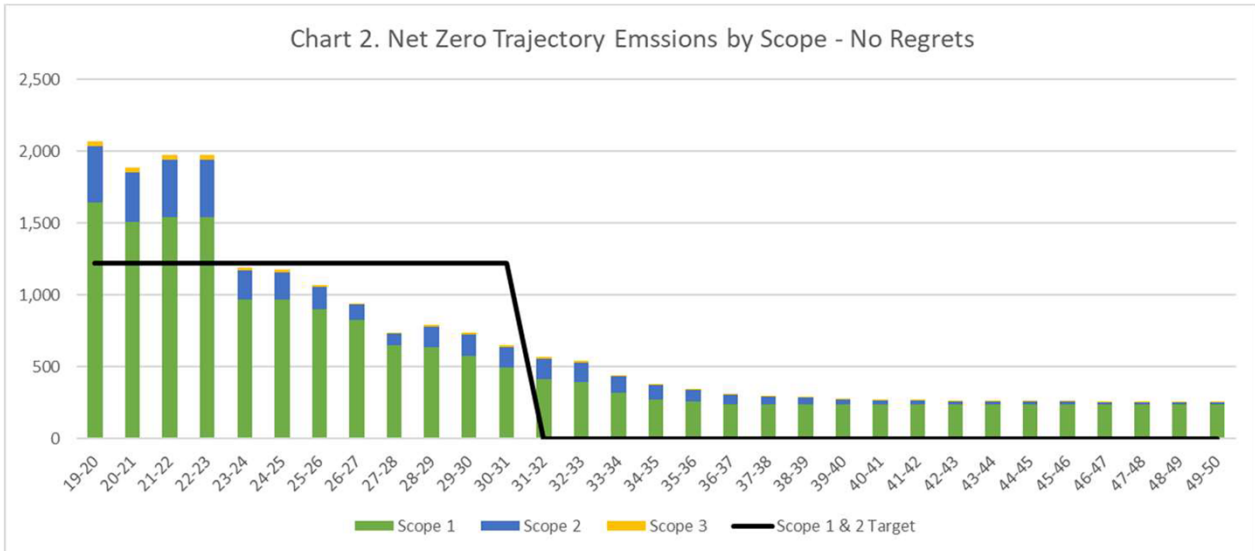
5. Building Energy Audits were conducted by Optopia at six main sites (Town Hall, Depot, Harlequin and the Community Centres at Banstead, Horley and Woodhatch) and two multi-storey car parks, with the final report available in December 2022. Desk top assessments were also conducted for several smaller sites. The audits identified costed opportunities to reduce energy consumption, to transition from fossil fuels to low / zero carbon heating and to install renewable energy generation. The report recommends that better energy monitoring and control, with some building fabric improvements, could reduce overall energy consumption which reduces operational costs and carbon emissions.
6. Based on the top seven recommendations at these eight sites (which included opportunities for solar PV and battery storage, decarbonising the heating systems and measures to reduce energy consumption) total high-level costs were estimated to be £2.1 million with an associated saving in carbon emissions of over 600 tonnes CO_{2e}.
7. Responding to the report - Only high-level costs were provided in the report, and due to inflation, material shortages impacting costs, and the rising costs of fuel, the Property team are reviewing the audits and obtaining more definitive costs for the works in order to develop a programme of works.

Scope 3 Emissions

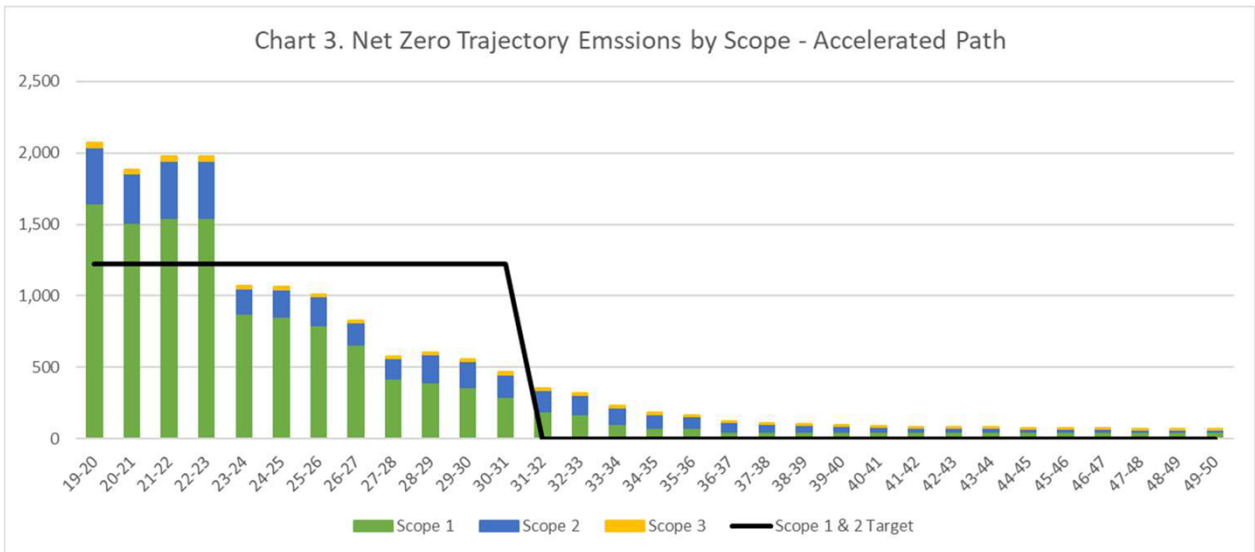
8. This report was produced by Optopia in November 2022. Scope 3 emissions are not part of the 2030 target but are targeted for “as soon as possible thereafter”. Scope 3 emissions are indirect emissions (those outside of direct control), typically those from suppliers, staff commuting, non-RBBC vehicle travel (eg public transport), water, waste and leased assets.
9. The report recommends that the minimum Scope 3 categories that the Council should report on are purchased good and services, capital goods, upstream and downstream transportation and distribution, waste generated in operations, business travel, employee commuting and leased assets. For each category there should be transparent reporting, good record keeping, a record of what is and isn't included, and details of any assumptions made.
10. Responding to the report - Data collection will need to start to develop a baseline against which improvements can be recorded and it is planned that the Sustainability team will start working out how to collect this data in 2023/24, in conjunction with all relevant service areas, with an aim to have a full set of data for a baseline by 2025/26.

Net Zero Trajectory

11. This report was produced by Optopia in November 2022. It looked at a number of scenarios to reduce Scope 1 and Scope 2 carbon emissions and calculated a trajectory of carbon reductions for each scenario.
12. The report highlights that in 2019/20 the fleet produced 61% of RBBC greenhouse gas emissions, with 19% related to heating and hot water, 11% to air conditioning, 4% to lighting and 6% to remaining electrical load. The majority of the fleet emissions are from the refuse and recycling vehicles, whilst the Town Hall emits the most greenhouse gas emissions, followed by the Harlequin then the Depot.
13. The ‘no regrets’ scenario (cost-effective actions) includes those to reduce energy (for example LED lighting), those that reduce carbon (switching some of the fleet to low carbon fuels) and installing renewable energy at six sites. The trajectory forecasts that emissions in 2030/31 would be 647t CO_{2e} (or a reduction of 69% on the 2019/20 baseline) as shown in Chart 2 of the report.



14. For the best case scenario ('the accelerated path') based on the 'no regrets' scenarios plus improving roof and wall insulation, transitioning elements of the fleet to electric, and adding four extra sites for solar energy generation, the trajectory forecasts that emissions in 2030 would be 452t CO_{2e} (or a 77% reduction on baseline) as shown in Chart 3 of the report.



15. To get closer to zero greenhouse gas emissions by 2030 the report recommends three further actions, subject to technological and cost advancements – transition sites away from gas and monitor the marketplace to be able to transition fossil-fuel vehicles to zero-emissions. Bringing forward the fleet decarbonisation plans currently indicated for the years 2031-37 would reduce the 2030/31 emissions by a further 238 tCO_{2e}.

16. Responding to the report - Typically, net zero requires residual carbon emissions that need to be offset to be less than 10% of baseline (ie for the Council this would be less than 207t CO_{2e} in 2030 based on the 2019/20 baseline). Part of the proposed 2023/24 Strategy review will need to investigate what additional measures may be required to reduce residual emissions to less than 10% of baseline. Subsequently a costed plan for how residual emissions will be offset will need to be researched and developed.

Transport Decarbonisation Report

17. This report, by the Energy Saving Trust, was finalised in May 2022. It is a review of the Council fleet of approximately 117 vehicles (including mowers and tractors) to determine which of these could be replaced with electric equivalents and whether there are viable hydrogen alternatives for the larger vehicles. Implications for carbon and cost were considered on a whole-life basis.
18. The report concluded that there are electric alternatives currently available on the market for 69 of the fleet which could reduce CO_{2e} emissions by 910 tonnes. Twenty-five vehicles could not currently be replaced with a viable electric equivalent, but alternatives are expected to be available in the near future.
19. The report recommends that a strategy is developed for the introduction of charge points to support vehicle electrification, and that the viability of extending the life of current internal combustion engine vehicles is explored until an electric alternative is available. The report concludes that electric technology will be available for all heavy duty vehicle roles before 2030 and provides commentary from major manufacturers that are focusing on electric vehicles rather than hydrogen, although it does recognise that niche uses may involve hydrogen.
20. The report recognises the theoretical benefits of using Hydrotreated Vegetable Oil (HVO) as a drop-in replacement for diesel, but expresses concerns about the source of feedstock.
21. Responding to the report - In conjunction with service areas, the Transport Manager continues to assess the suitability of electric alternatives when vehicles reach end-of-life, and electric alternatives are being trialled across a range of vehicles and equipment. The Transport Manager and the Property Team are starting to look into the electrical capacity of the Depot to determine whether grid upgrades will be necessary. Work is underway to determine the appropriateness of HVO (with suitable conditions during procurement to address the feedstock issue) as a replacement for diesel whilst electric options are trialled and viable electric or other alternatively fuelled vehicles come on stream.