

# Appendix 1

## Local Area Energy Plan: Monitoring Report (2023)



# Background

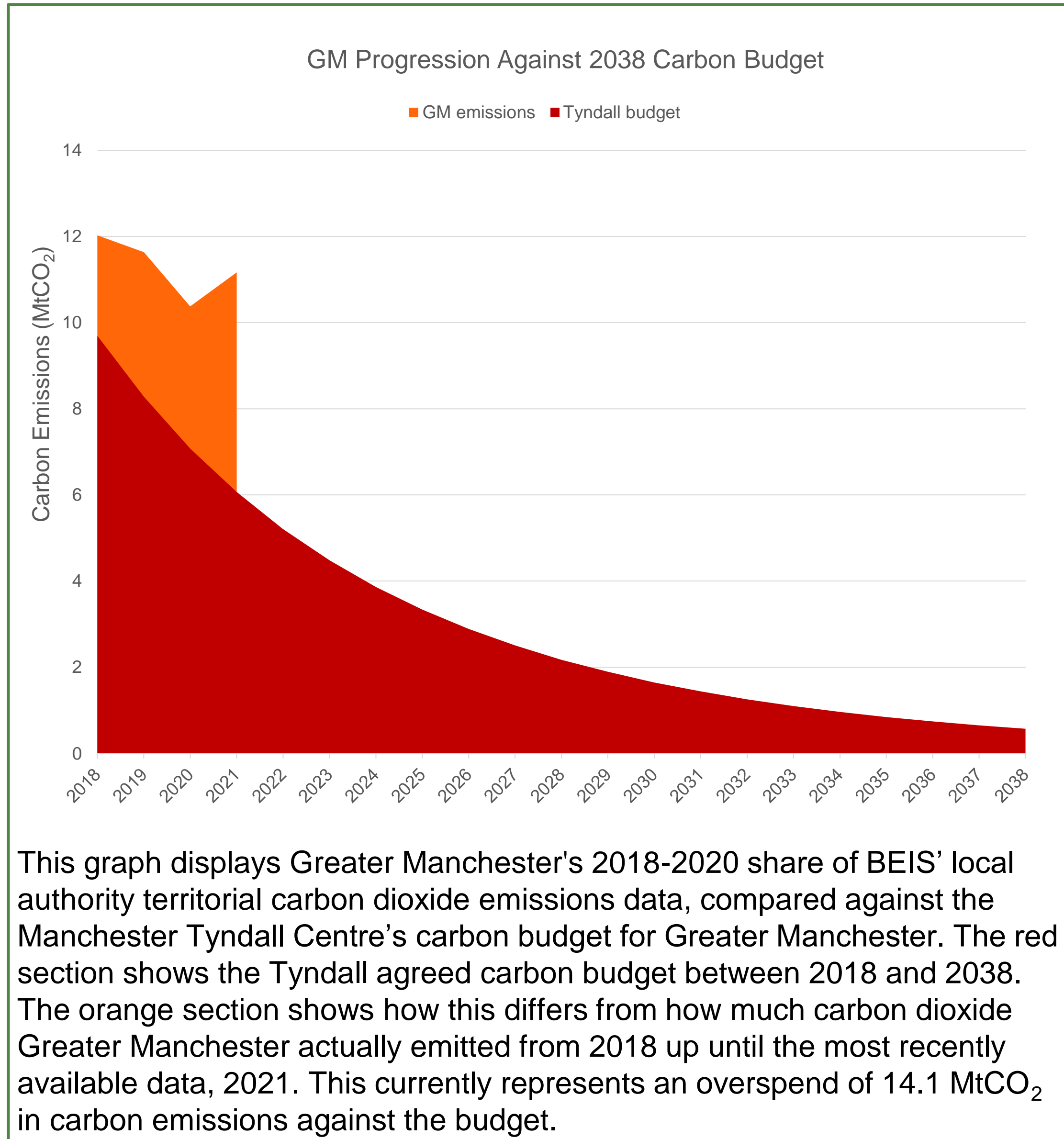
Manchester Climate Change Framework states that 68% of direct CO2 emissions arise from buildings and 32% from ground transport. The Local Area Energy Plan (LAEP) aims to support Manchester City Council to transition to an affordable and decarbonised energy system and to support the delivery of its commitment to carbon neutrality by 2038. LAEPs can help provide a roadmap for changes in green, clean energy infrastructure to meet 2038 carbon neutral targets and it does this in 4 main ways, through:

- Building fabric retrofit
- Heat De-carbonisation
- Local energy generation and storage
- Transport

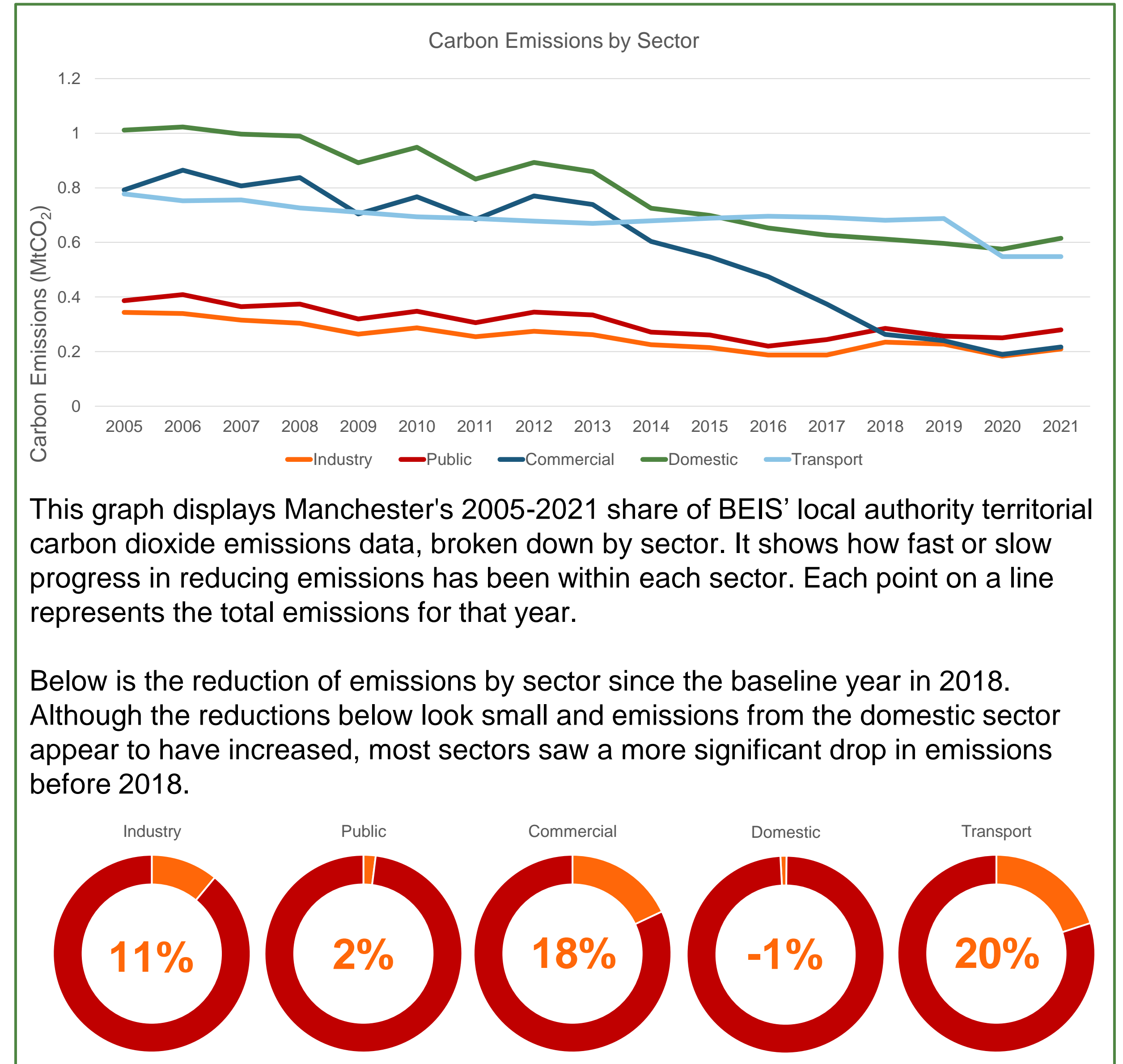
This transition will involve the greatest infrastructure change across Manchester and key chapters of the LAEP illustrate the scale of change and investment needed. The LAEP, adopted in September 2022, sets out the current position and an energy roadmap towards that decarbonised future. It describes a range of near-term, low regret, priority zones and opportunity areas for different technologies to address challenges presented by current energy type and usage. The term 'low regret' is used to describes measures that have a high confidence of succeeding based on current information and available technology. The LAEP identifies two separate scenarios going forward, the primary scenario utilises existing technology (such as heat pumps, increased insulation, PV solar panels, etc) whilst the secondary one takes into account a greater use of hydrogen for domestic energy usage, should this become available.

This monitoring report provides an indication of the progress being made towards the 2038 net zero targets in the areas outlined in the Manchester LAEP. The report will predominantly focus on the activities of Manchester City Council as it has the most control and responsibility over the its own estate and fleet practices. Where wider data and information is available this has also been included.

# Emissions



Source: [BEIS](#) and [Tyndall Centre](#)

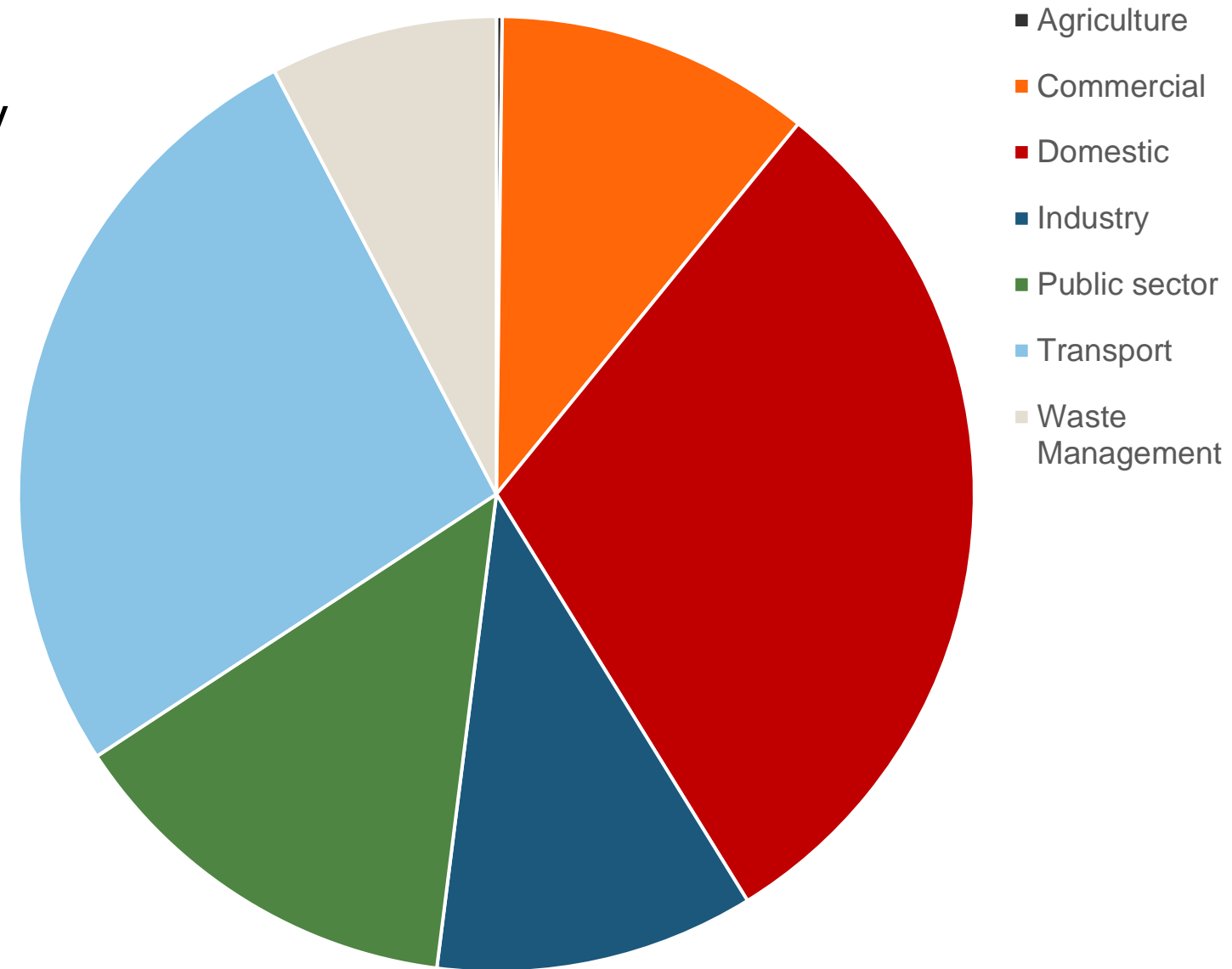


# Emissions

These pie charts show Manchester's 2021 local authority greenhouse gas emissions data, broken down by sector and subsector. They demonstrate where our emissions currently come from and therefore where we need to make most progress in reducing emissions. The Domestic and Transport sectors are shown as those areas requiring to make the most progress.

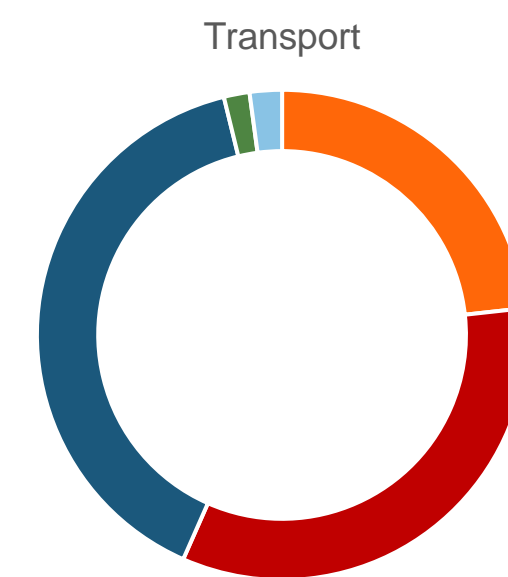
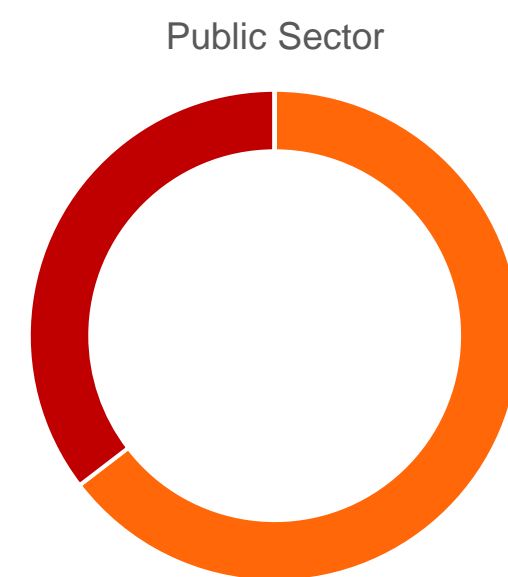
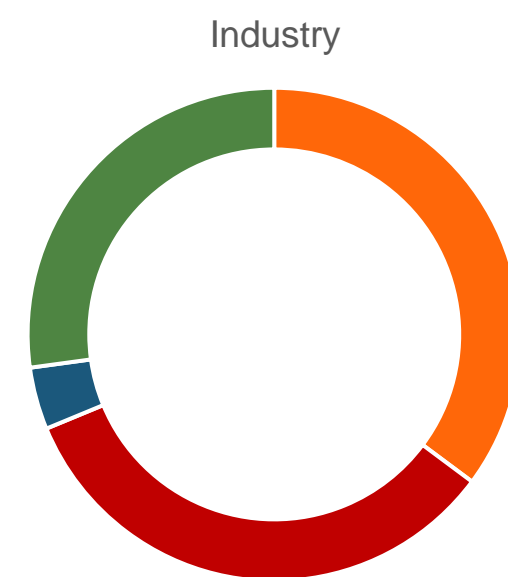
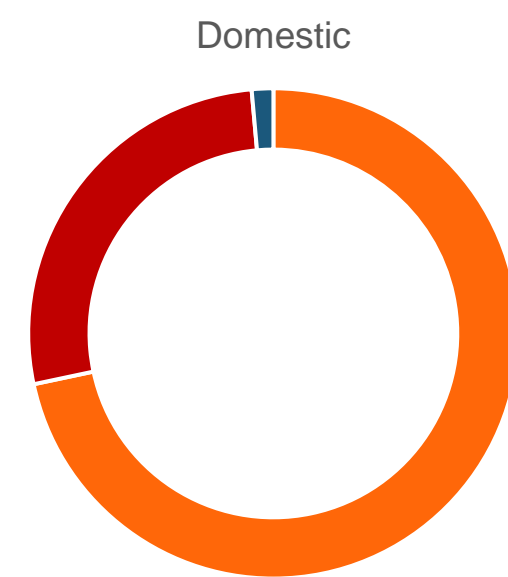
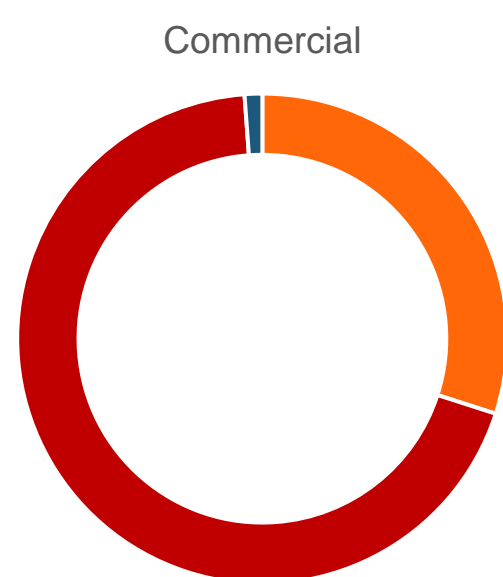
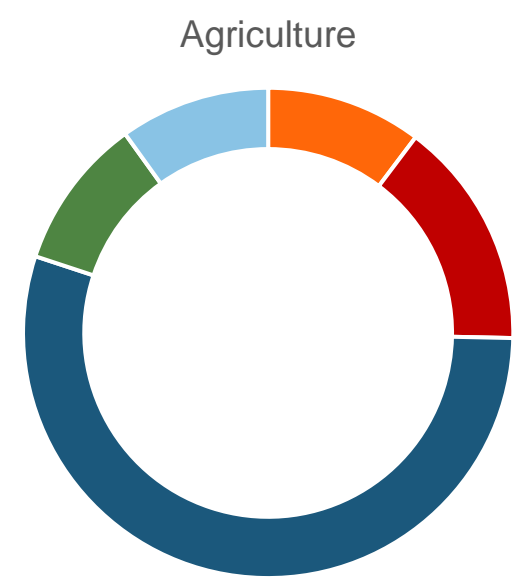
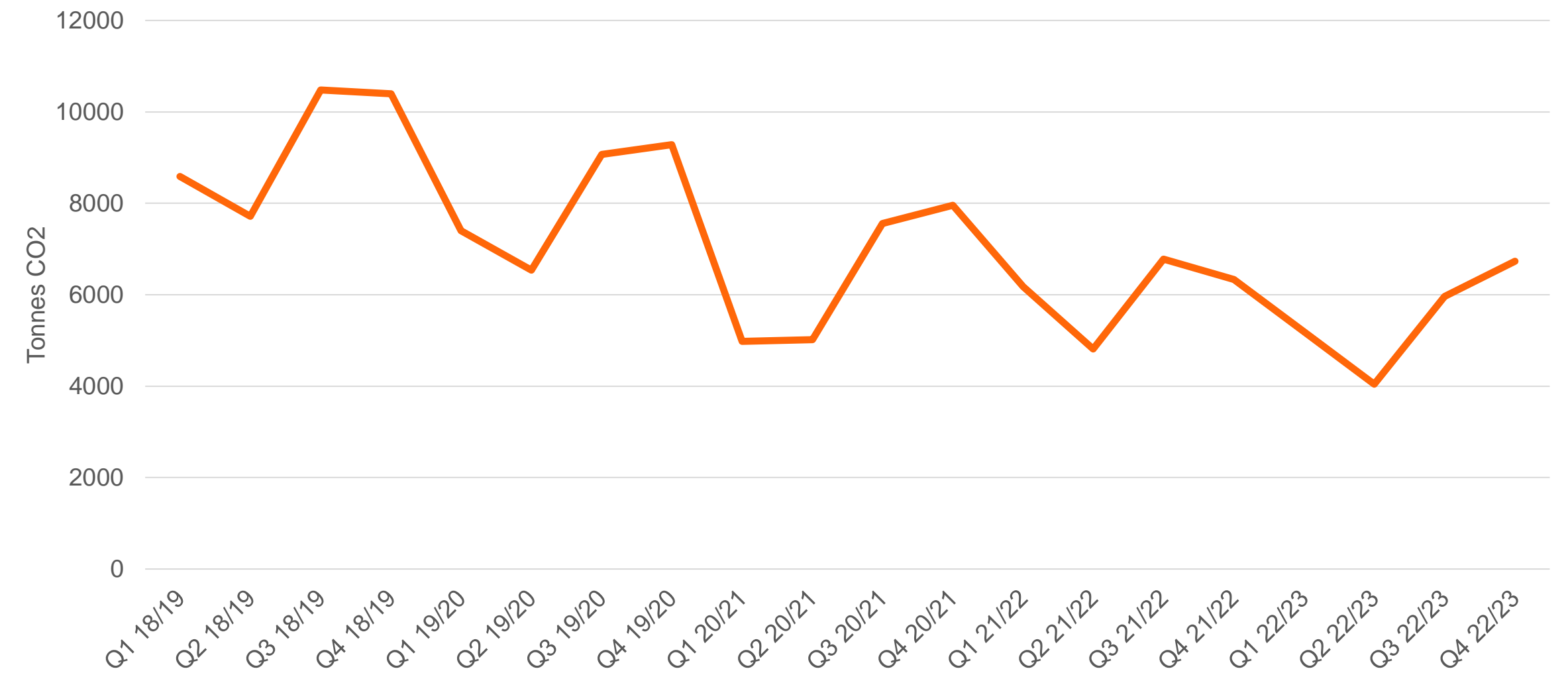
Emissions from aviation and land use, land-use change and forestry (LULUCF) are not available.

Greenhouse Gas Emissions by Sector

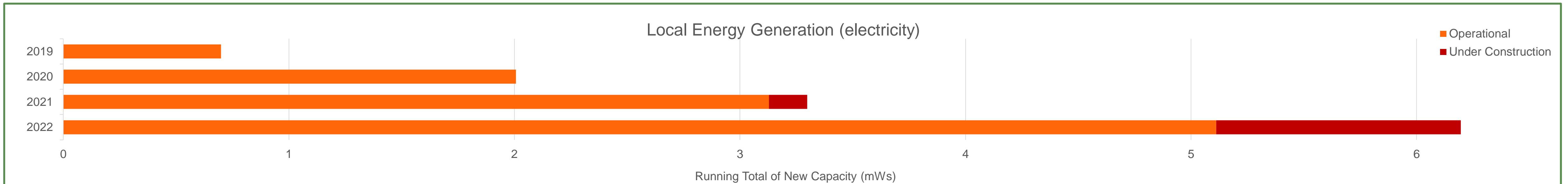


MCC's emissions have generally been falling. The graph shows clear peaks and troughs demonstrating seasonal change in emissions and lower levels during the covid-19 pandemic when buildings were closed or less used.

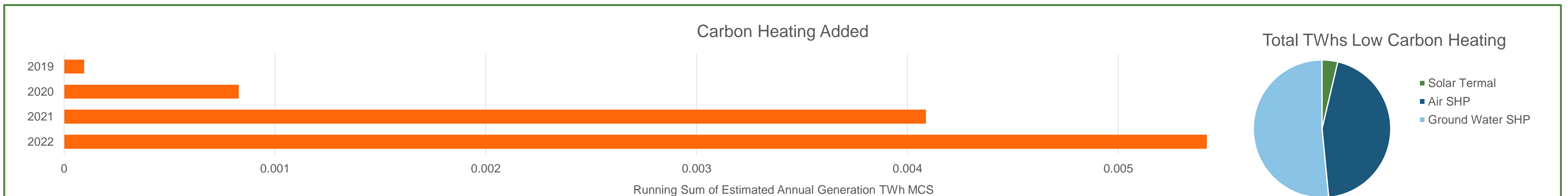
Total MCC Emissions



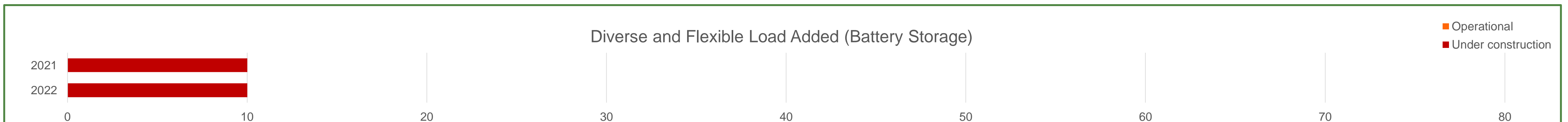
# Energy



This graph shows a running total of renewable energy generation capacity added in Manchester each year since the start of 2019. It combines data from BEIS Renewable Energy Planning Database (projects over 150kW) with the MCS Installations Database (projects under 50kW). These two datasets do not capture new supply between 50-150kW, so GMCA have added in capacity within this range from public sector-led projects they are aware of. It is likely there is further new capacity GMCA have yet to report. Currently it shows only solar generation.



This graph shows a running total of low carbon heating added in Manchester each year since the start of 2019. It takes data from the MCS Installations Database (projects under 50kW). BEIS Heat Network Planning Database (HNPD) also offers some insight into low carbon heating, however the HNPD data is measured in a way which makes combining it with MCS data difficult. These figures are therefore likely to be underestimates.



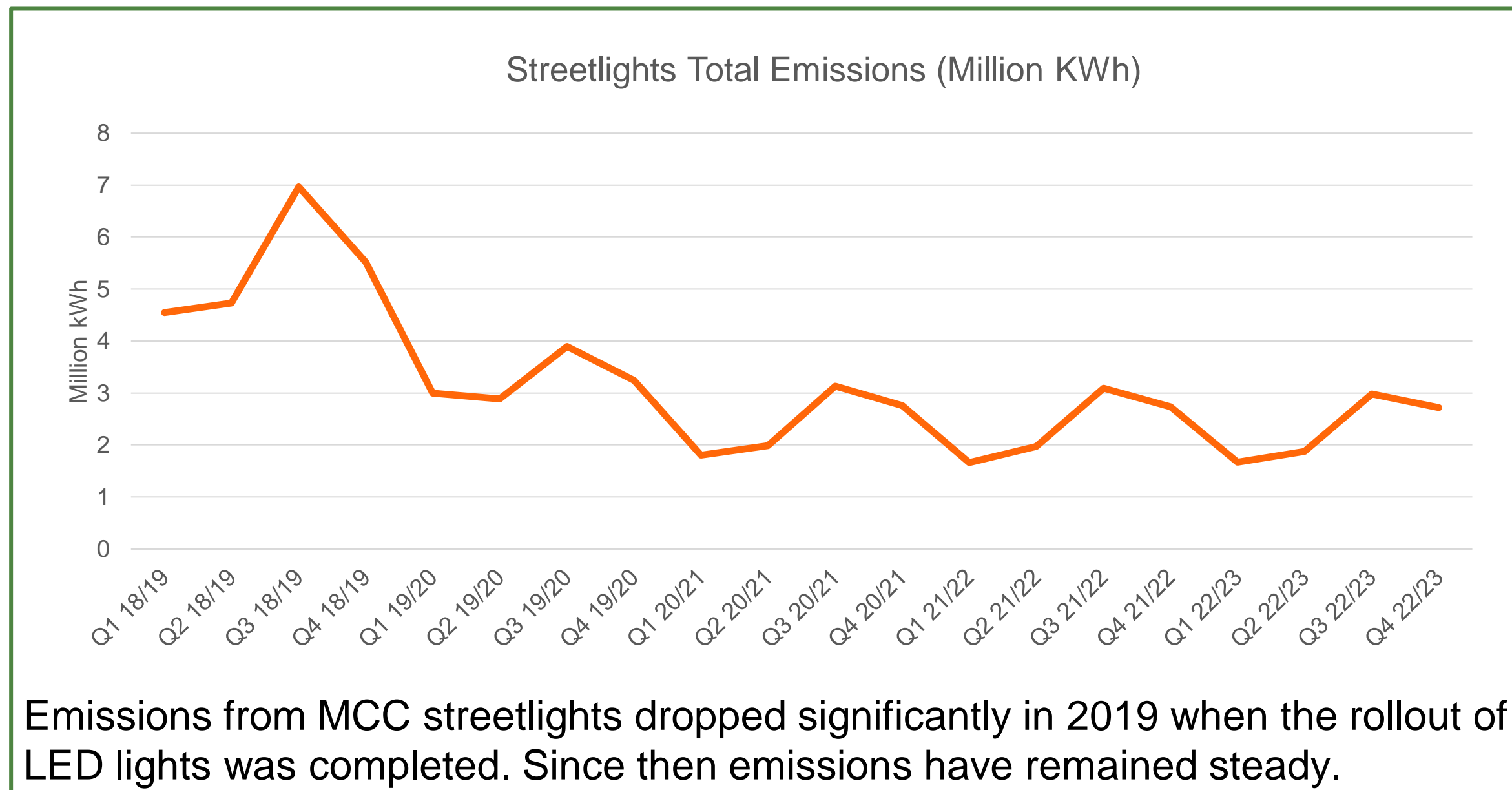
This graph shows a running total of diverse and flexible load added in Manchester each year since the start of 2019. It takes data from BEIS Renewable Energy Planning Database (projects over 150kW) and supplements it with smaller public sector led projects. Currently this shows only battery storage but it will also include alternative storage projects such as liquid air energy if and when they are built.

# MCC Estate Retrofit

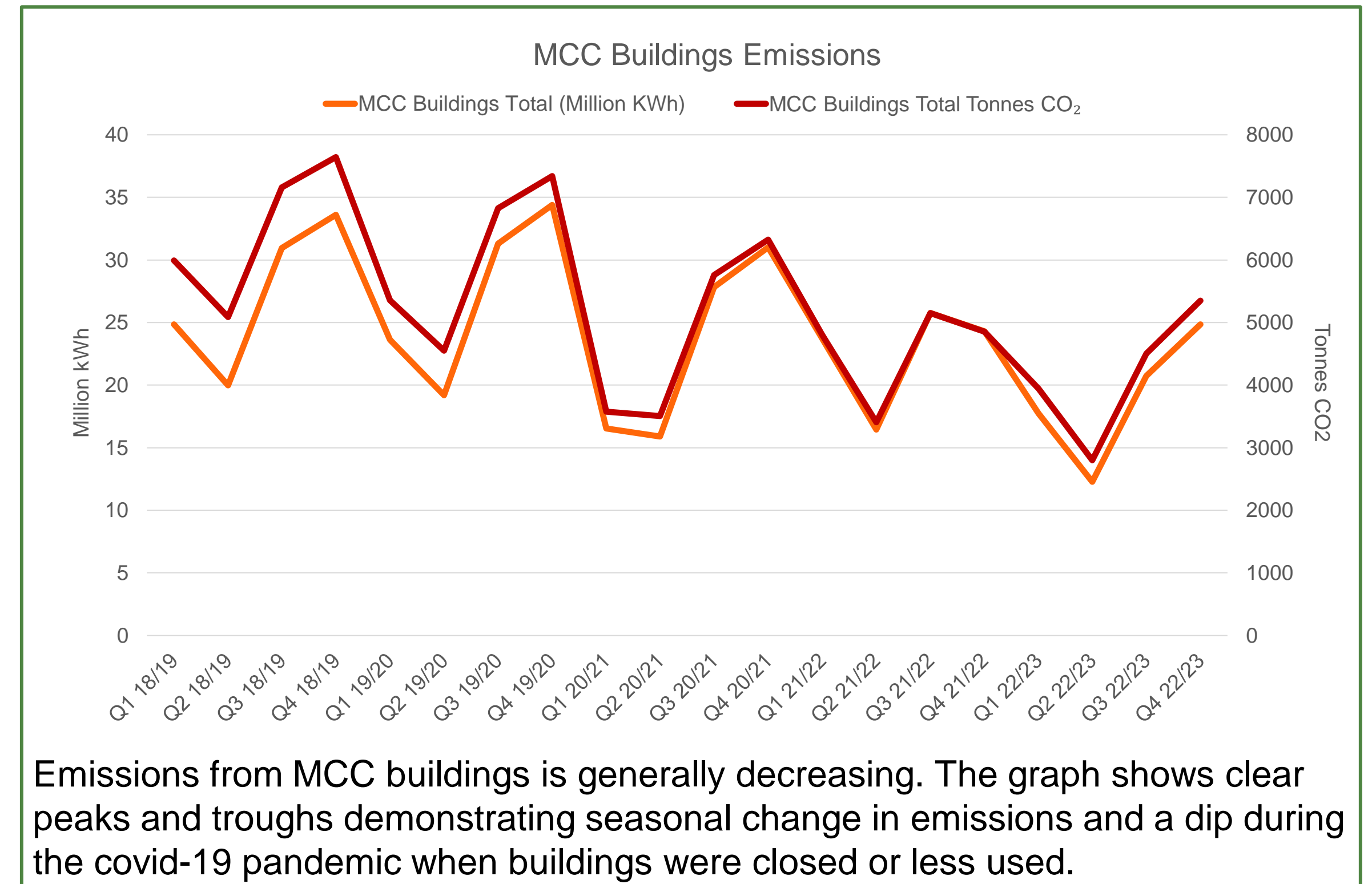
The Zero Carbon Estate Programme was established to take a strategic approach to retrofitting MCC buildings to meet our 2038 net zero carbon target. Works include measures such as LED lighting, lighting controls, solar photovoltaic panels, battery storage, ground and air source heat pumps, insulation and heat recovery.

During phase 1 and 2 of the project, 16 buildings within the MCC estate were retrofitted. In phase 3 of the project, the following MCC buildings will be retrofitted:

- Active Lifestyle
- Arbeta
- Didsbury Library
- Hall Lane Resource Centre
- Harpurhey District Social Office
- The Place at Platt Lane (Fallowfield Library)



Emissions from MCC streetlights dropped significantly in 2019 when the rollout of LED lights was completed. Since then emissions have remained steady.



Emissions from MCC buildings is generally decreasing. The graph shows clear peaks and troughs demonstrating seasonal change in emissions and a dip during the covid-19 pandemic when buildings were closed or less used.

Large scale retrofit will require thousands of new operatives to be trained and upskilled to undertake retrofit work. To support retrofit skills in Manchester, the Council's Work and Skills team have embedded retrofit within the Liveable and Zero Carbon priorities in the refreshed Work and Skills Strategy. Institutions such as GC Skills Centre and Manchester College are delivering construction and retrofit skills training alongside smart tech, renewable energy and vehicle electrification through bootcamps and technical education etc. It is difficult to effectively capture progress in this area as green skills are often elements of wider courses and not separately quantified.

# Housing Retrofit

## **The Manchester LAEP says:**

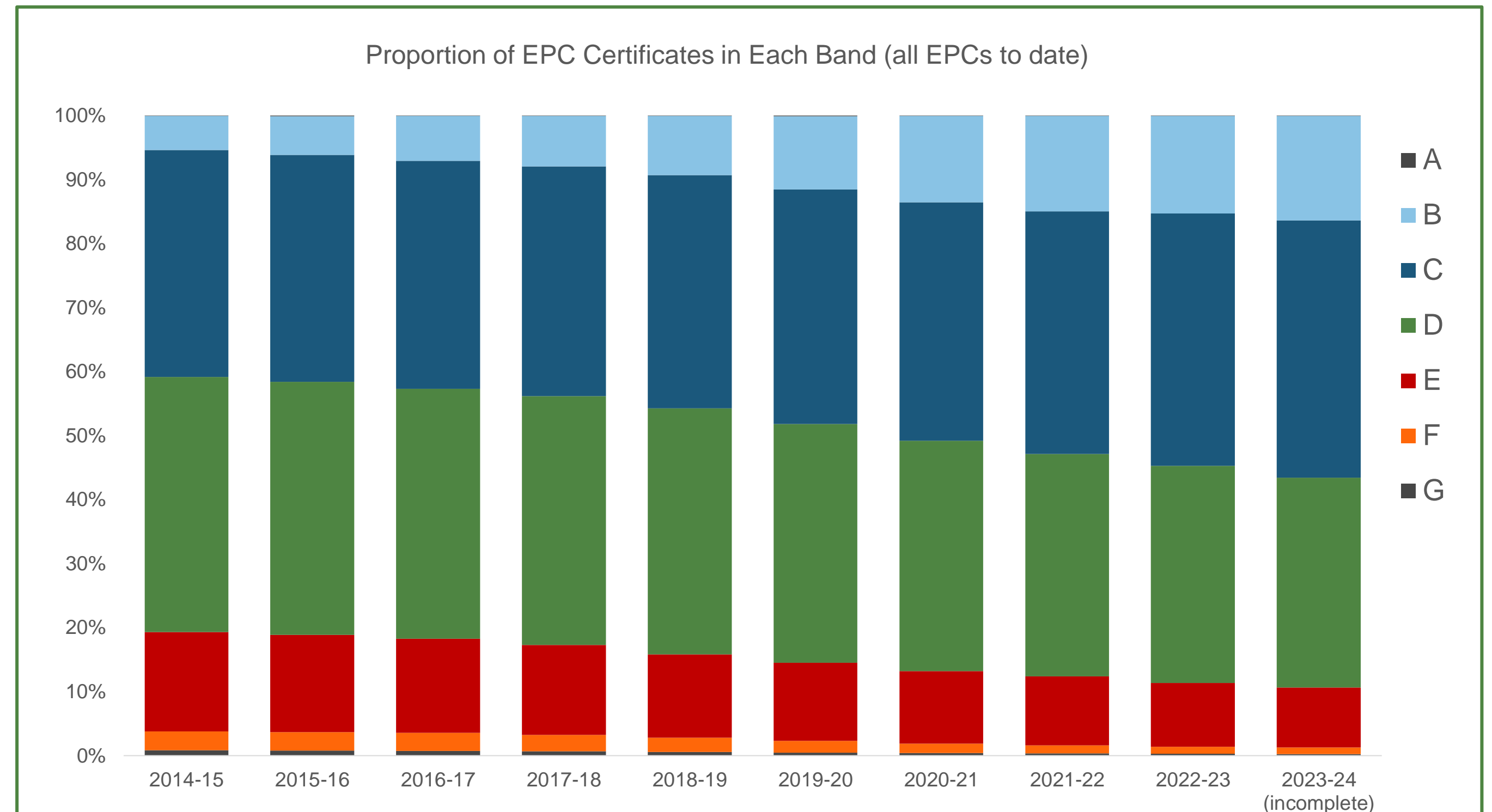
At least a third of Manchester's dwellings receive insulation retrofit in the LAEP: 101,500 in the primary scenario and 135,700 in the hydrogen focused secondary scenario. The greater number of retrofitted dwellings, which involves more extensive (or deep) measures, required in the hydrogen scenario is included to help meet the carbon budget. Fabric retrofit and solar PV are low regret measures to progress in the short term.

Three heating options are explored to decarbonise buildings: electric heating (primarily heat pumps), hydrogen to replace natural gas, and district heat networks. For hydrogen to play a significant heat decarbonisation role, certainty would be required that hydrogen will be available to supply Manchester in a timeframe that supports the delivery of the GM carbon budget. Alternatively, over 180,000 heat pumps are deployed, serving most dwellings, except in North 2 and Central 1 where district heat supplies a large share of buildings due to the higher density of buildings. The combined cost of fabric retrofit and heating system replacement is £3bn for homes, and 5.7bn for nondomestic buildings. It is recognised that delivery of any option presents comparable challenges and risks, resulting in the need to focus on the demonstration and scale-up approach advocated.

Ongoing and future new build housing in Manchester:

1. 69 new low carbon Council properties are being developed at Silk Street, Newton Heath
2. In February 2022, MCC launched its own housing development company known as "This City", with the focus being to deliver high-quality, low-carbon, affordable homes in Manchester

Source: [DLUHC](#)



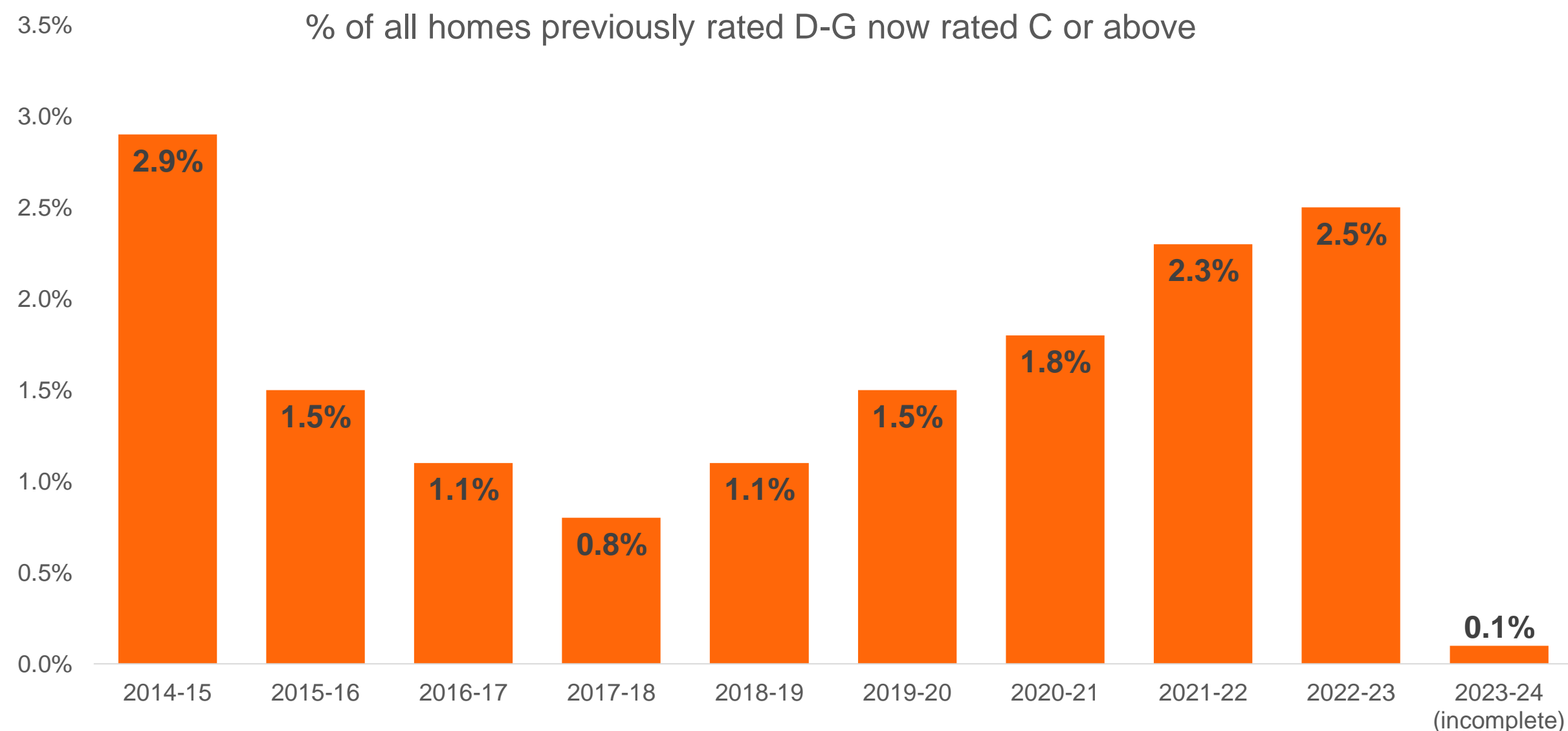
This chart shows how the spread of Energy Performance Certificate (EPC) ratings across Manchester has evolved each year. The figures are a running total, and suggest that Manchester's housing stock is generally improving in terms of overall efficiency. EPCs older than ten years (as of 31 March each year) are discounted. For the year 2022-23, 46.5% of homes in Manchester had an EPC rating of C or above.

An A rating indicates the most energy efficient homes, while G indicates the least. The UK Department for Energy Security and Net Zero wants as many UK homes as possible to reach EPC C by 2035. Not all homes have an EPC (primarily owner-occupiers), and those which do have an active EPC may only be updated every ten years, so this data cannot provide a full snapshot.

# Housing Retrofit

According to the Climate Change Framework 2022 Update [1], Manchester homes make up approximately a quarter of the city's total carbon emissions. The Council's Housing Strategy commits the Council to the target of completing the zero-carbon retrofitting of a minimum of 1/3rd of the 67,300 homes managed by Manchester Housing Providers to an EPC rating of B or above by 2032. The council owns approximately 15,700 homes, 60% of which will need to be retrofitted in order for the city to meet the Housing Strategy target for social housing. The retrofitting measures are likely to include:

- energy efficiency improvements, such as insulation of walls, roof and floors
- moving away from fossil fuel-based heating such as gas boilers to using low carbon systems such as heat pumps or connecting to heat networks.



This chart shows the number of homes with an EPC rating which moved from D or below to C or above, as a proportion of the total number of homes which had an EPC rated D or below at the start of the year (i.e. what proportion of inefficient homes are being made efficient each year).

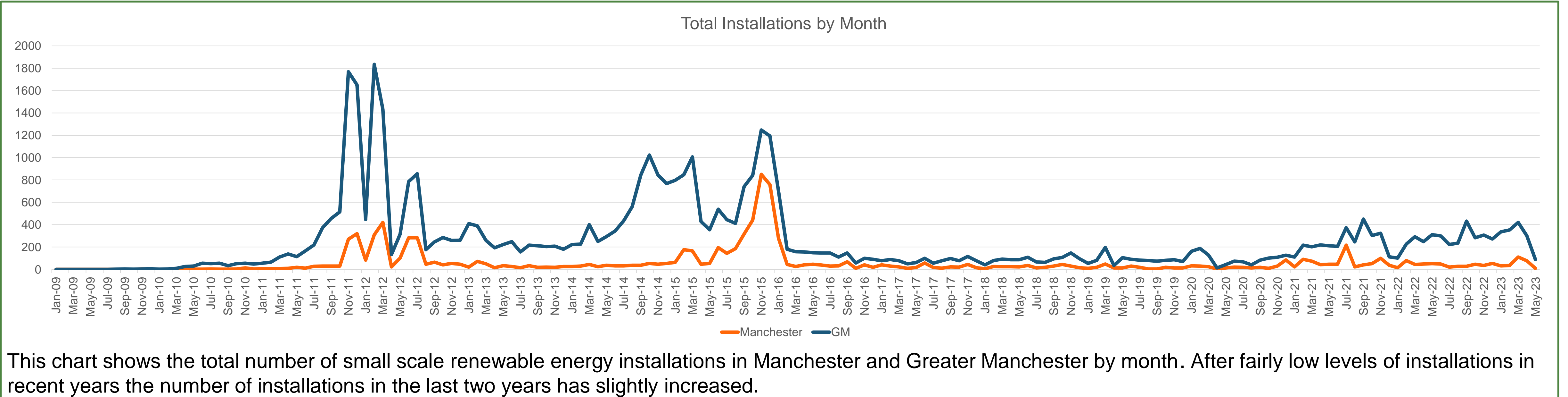
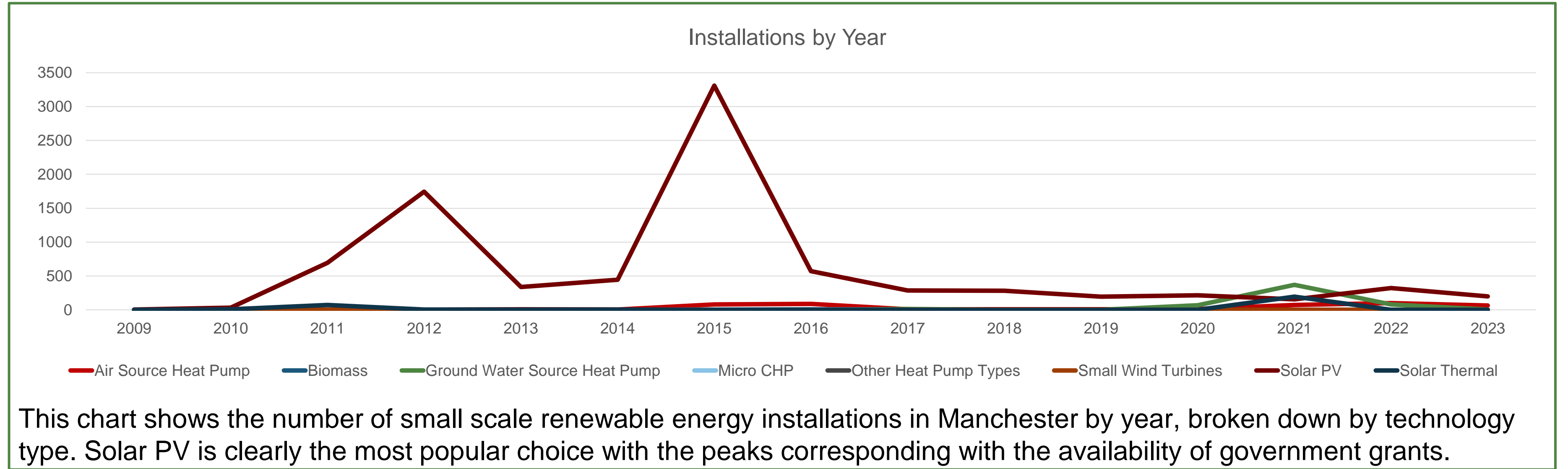
Ongoing and Future Retrofit projects in Manchester:

1. Completed Homes as Energy Systems project with approx. 500 properties with energy efficiency measures, air and ground source heat pumps and 130 solar PV and battery systems.
2. Social Housing Decarbonisation Fund (SHDF) Demonstrator scheme in partnership with One Manchester Housing Association has resulted in around 90 properties along Grey Mare Lane in Beswick undergoing deep retrofit works, with 70% taking up a heat pump.
3. Secured £11.6m of government funding with £38m match funding from MCC towards retrofitting council housing stock - approx 1,600 homes with additional insulation and ventilation and also for the installation of renewable energy systems.
4. Home Upgrade Grant 2 (HUG2) - £10m to support approximately 500 privately owned homes
5. ECO4 LA Flex – GMCA-led scheme to help fuel-poor households living in poorly insulated homes. Targeting approximately 400 homes per year for the next three years in Manchester alone.
6. Levenshulme scheme to demonstrate how the delivery of whole house retrofits can be scaled up to area level. The scheme involves retrofitting a small number of privately owned pre-1919 terraced homes
7. The Council have continued to work with the Zero Carbon Working Group of the Manchester Housing Providers Partnership to ensure all social housing properties are on a path to zero-carbon
8. Your Home Better Scheme (GMCA) launched June 2022 currently helping those willing and able to pay - looking for other financial solutions going forward
9. Home Energy Loan Plan (HELP) - assisting homeowners and some private sector landlords to get access to low interest finance. Interest free loans for up to £10,000 can be made for energy efficiency works and heating system upgrades



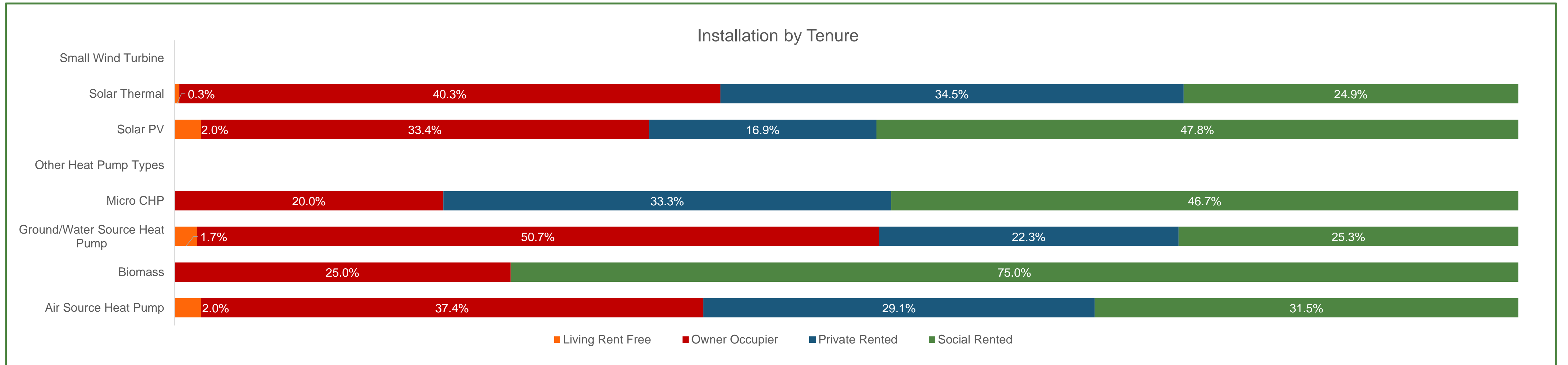
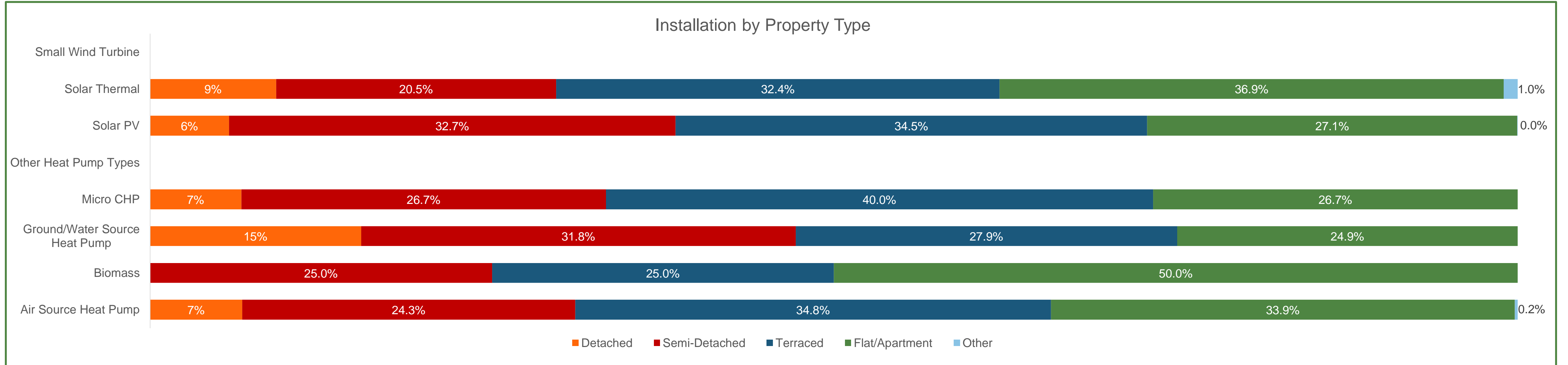
# Small Scale Renewable Energy

**The Manchester LAEP says:**  
 To reduce emissions in line with the GM carbon budget, local energy generation could increase significantly, consisting predominantly of the installation of solar PV on much of the available roof space across all parts of Manchester (under all scenarios considered), providing up to 1,230 MWp of installed capacity, at a cost of £3.1bn. Electricity networks could expand to accommodate electrification at a cost of £375m, and £835m could be invested in district heat networks.



Source: [MCS](#)

# Small Scale Renewable Energy



These graphs show the proportion of small scale renewable energy installations in Manchester by property type and by tenure.

Source: [MCS](#)

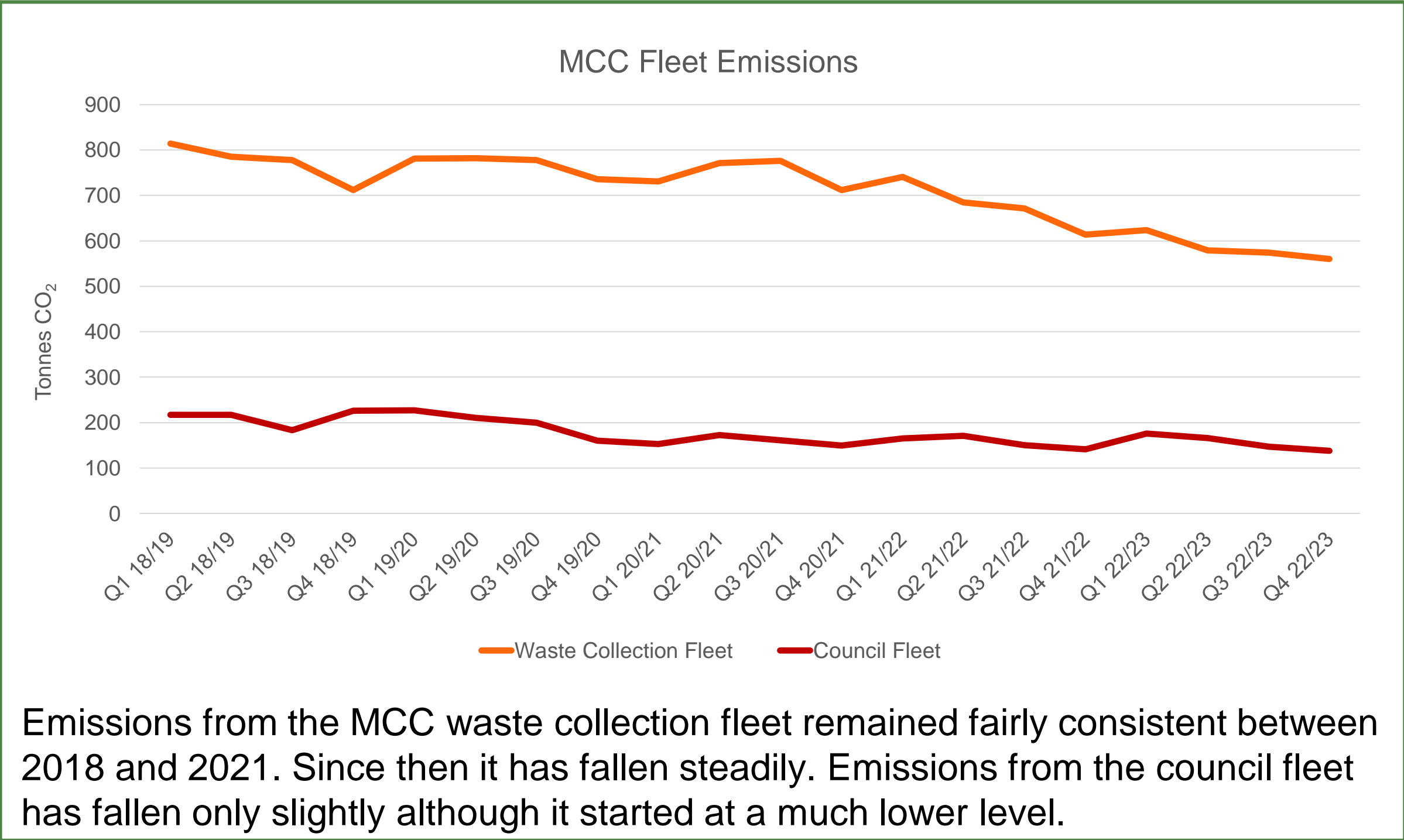
# MCC Fleet Emissions and Fleet Transition

The MCC fleet currently includes 41 all electric vehicles (EVs) and 4 hybrid cars, totalling 45 vehicles. This represents some 23% of our fleet.

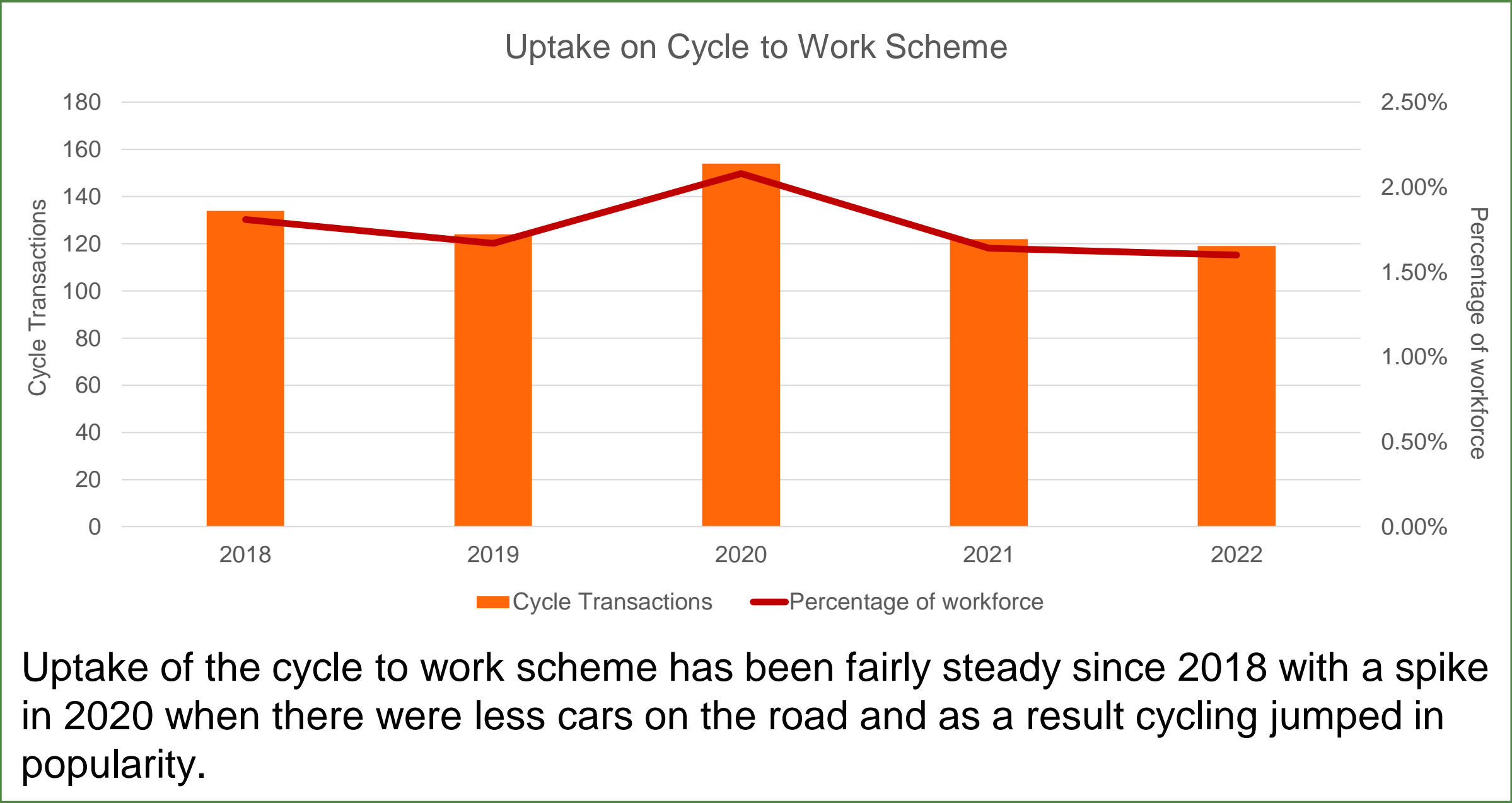
This includes 13 vehicles for Facilities Management, of which 10 are electric, representing 77% of the fleet.

Additionally Council partners Mitie have 8 vehicles, which are all electric and Equans currently have 8 EVs but are due to shortly move to 22, which will equate to 80% of their fleet.

MCC currently have 27 Electric refuse collection vehicles in our Biffa fleet and a further 3 small vans. This is approximately 30% of the RCV fleet and around 15% of small vans. There are plans to transition the remainder of the refuse fleet in the next 12-18 months.



Emissions from the MCC waste collection fleet remained fairly consistent between 2018 and 2021. Since then it has fallen steadily. Emissions from the council fleet has fallen only slightly although it started at a much lower level.



Uptake of the cycle to work scheme has been fairly steady since 2018 with a spike in 2020 when there were less cars on the road and as a result cycling jumped in popularity.

The MCC ultra-low emission vehicle staff salary sacrifice scheme opened in March 2023. As of 9<sup>th</sup> June 2023, 46 people have enrolled in the scheme with 20 people having already received their vehicle.

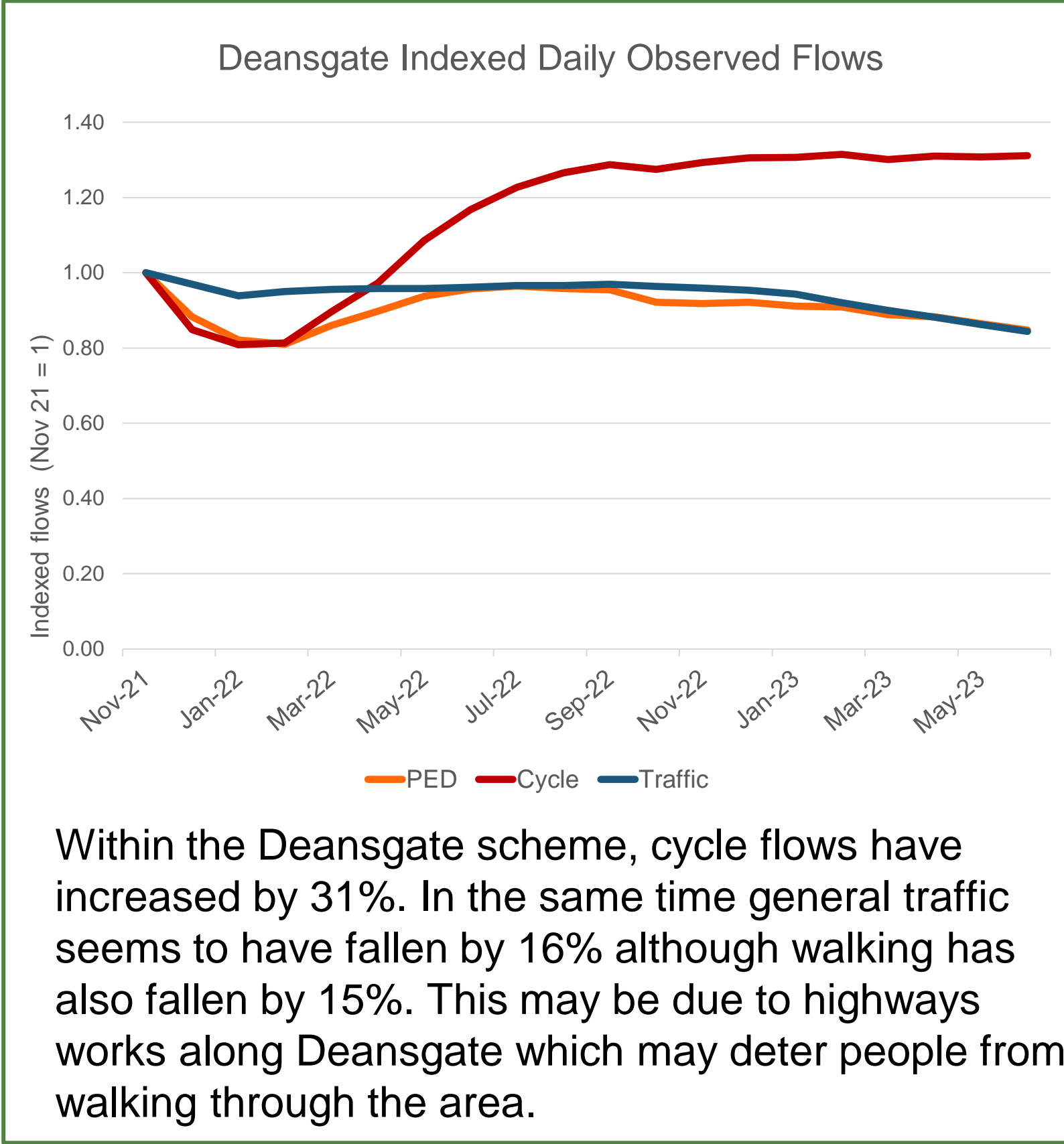
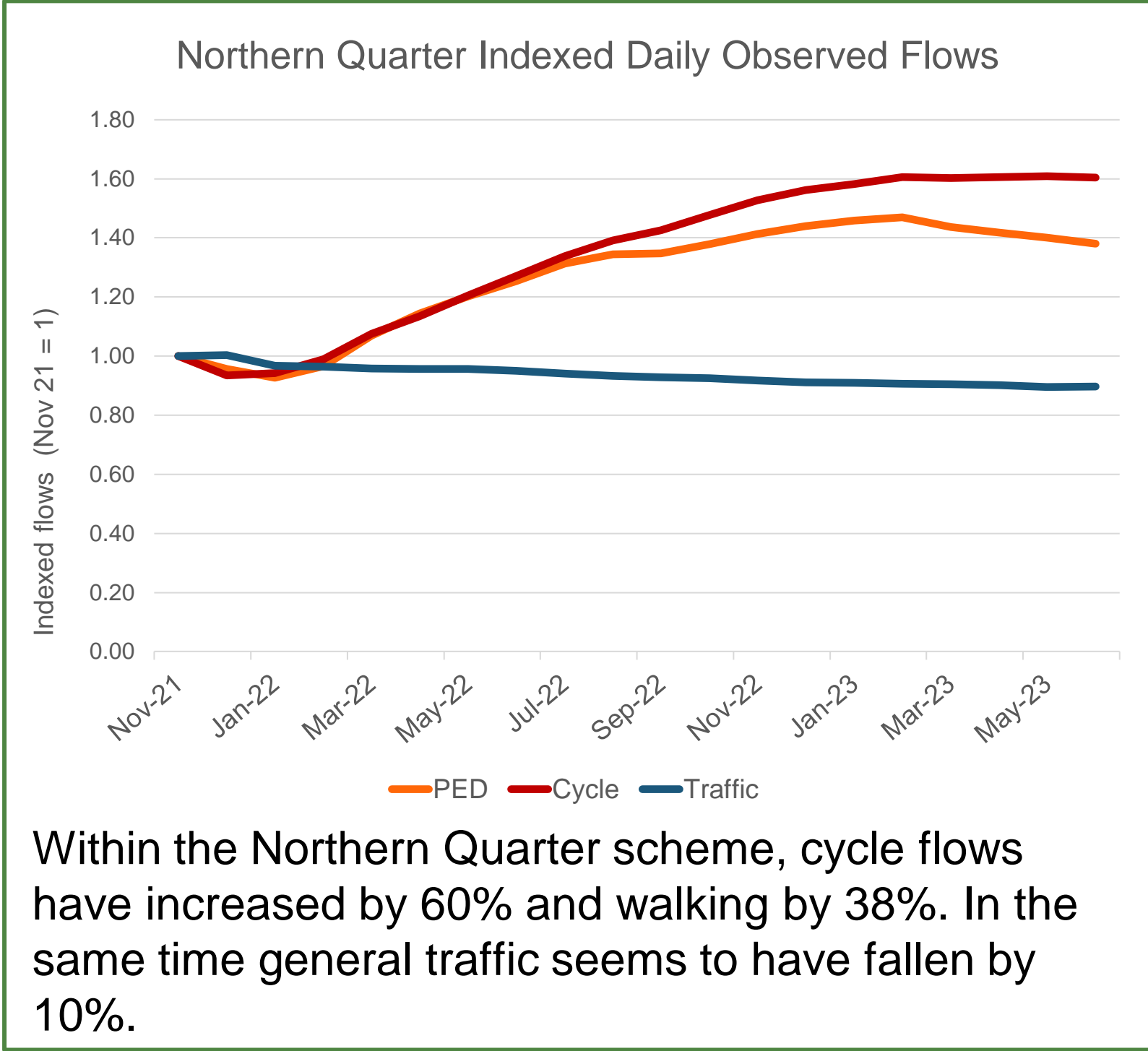
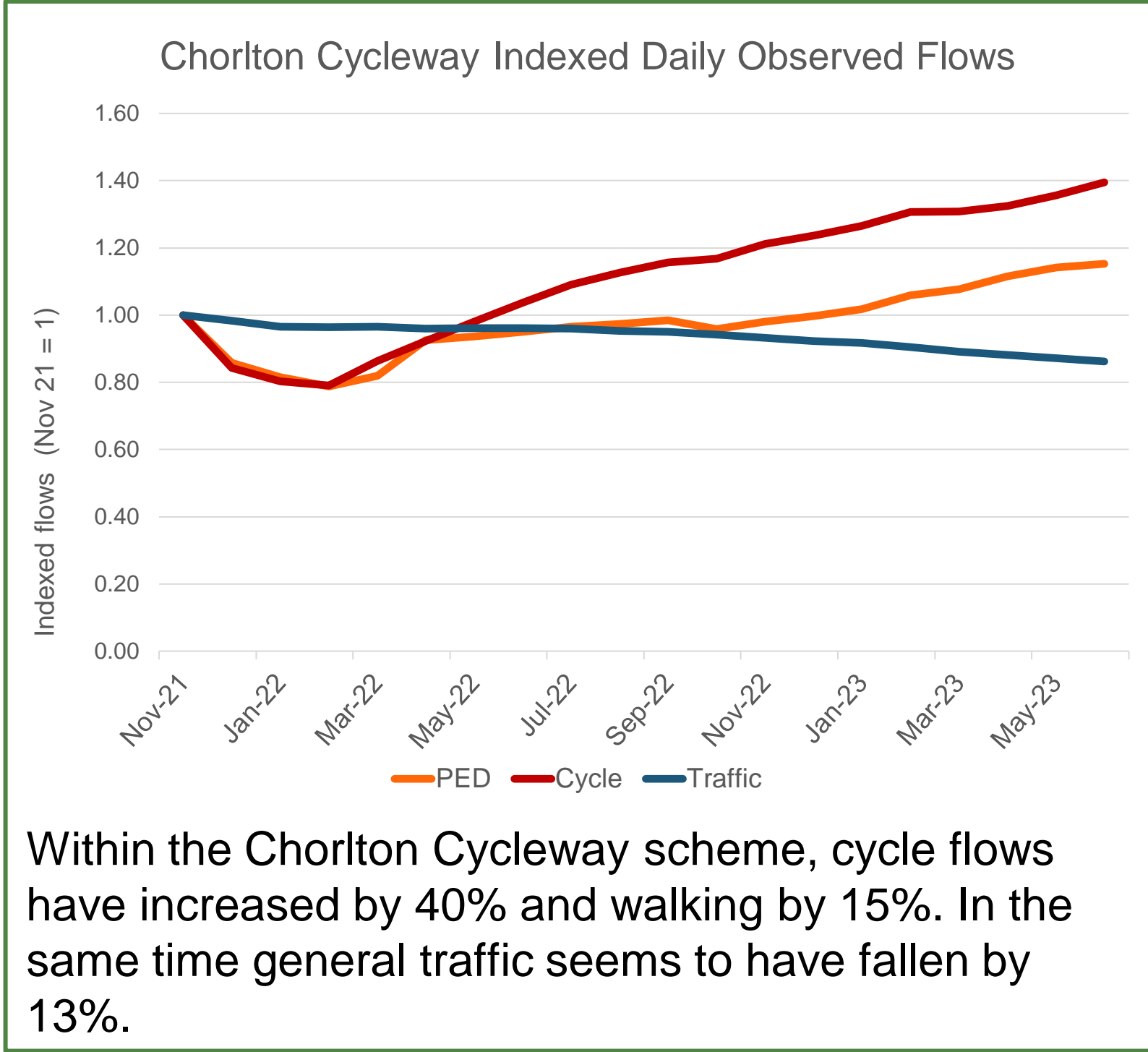
From January 2022, 12 e-cargo bikes & 3 trailers were integrated into the MCC fleet funded by the Energy Saving Trust and DfT with support from Manchester Bikes. There was a staggered delivery of bikes due to supply chain issues, but all were deployed by December 2022.

Total milage for MCC bikes so far: approx. 1475 miles

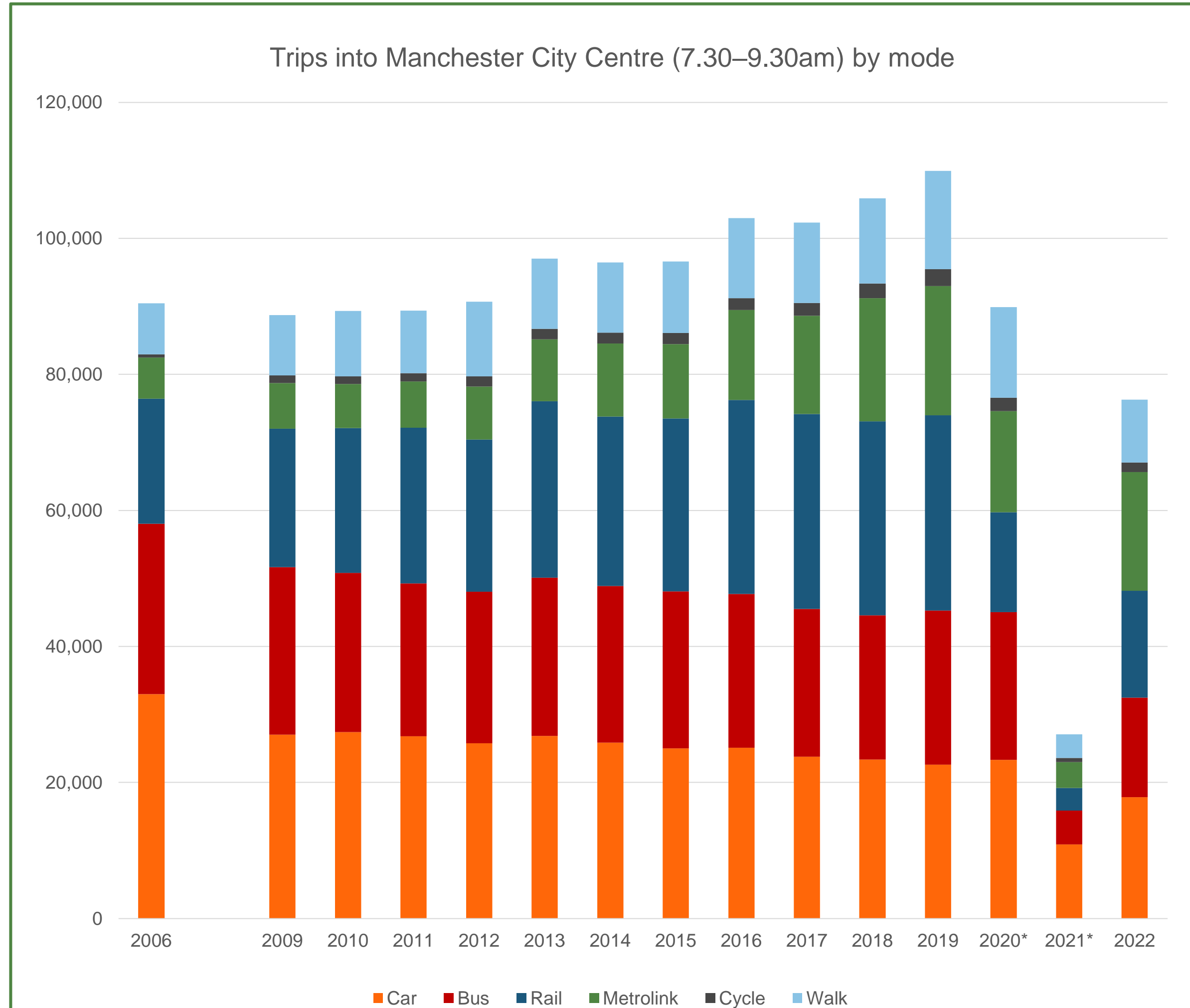
Bikes were provided to several departments within the council including Parks (Wythenshawe Park and Heaton Park), Cemeteries, Grounds Maintenance, Mcr Active (leisure centres including national cycling centre) and Neighbourhoods. Manchester Bikes also run a library of e-cargo bikes which can be used by council officers as well.

# Active Travel

The graphs below show data for three active travel schemes over the last 20 months. The data has been indexed to show the relative change in cycle, walk and general traffic flows indexed to November 2021 (the start of the data collection) and allow easy comparison between modes. In all cases cycling has increased and general traffic has decreased.

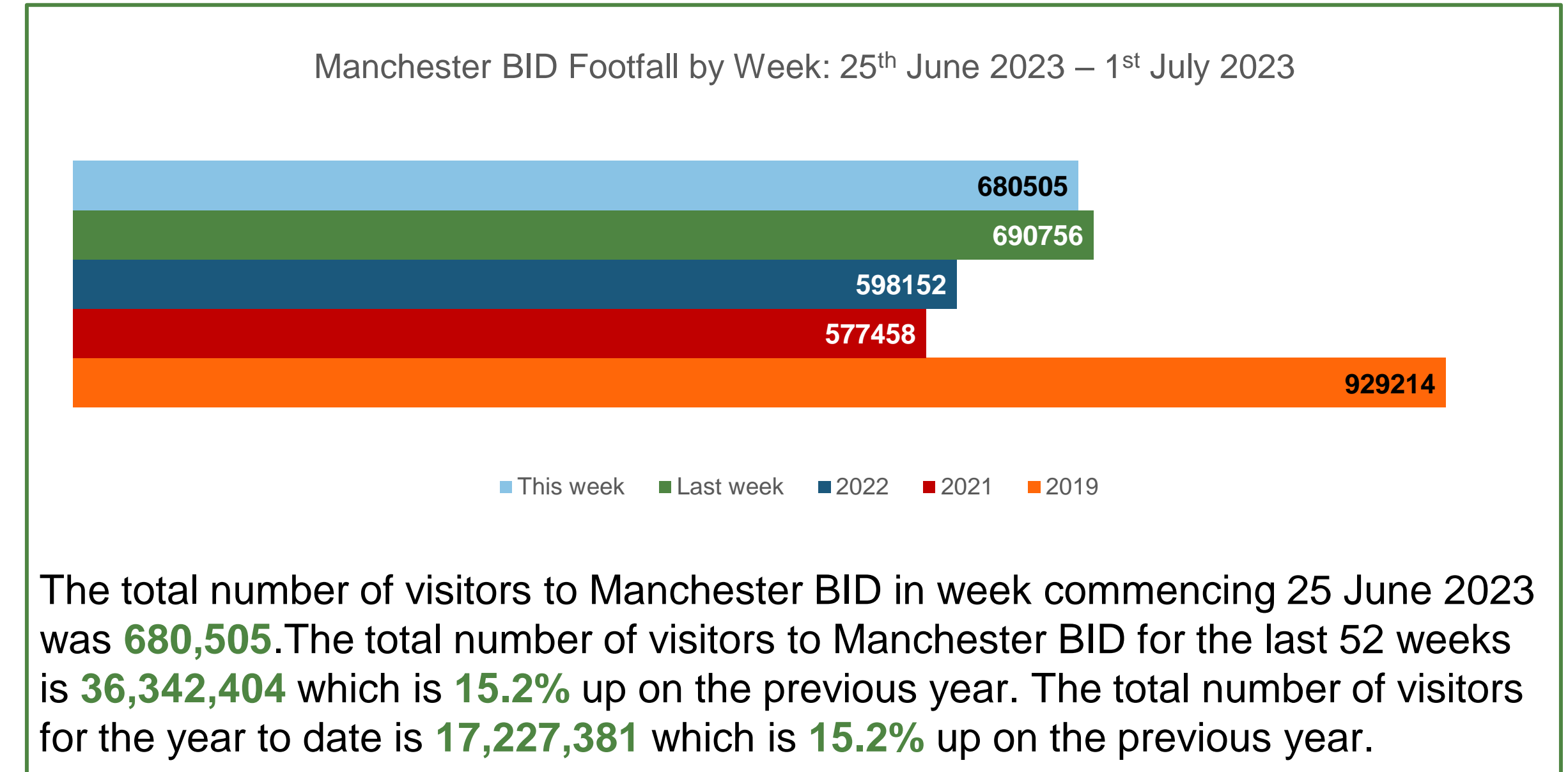


# Modal Shift



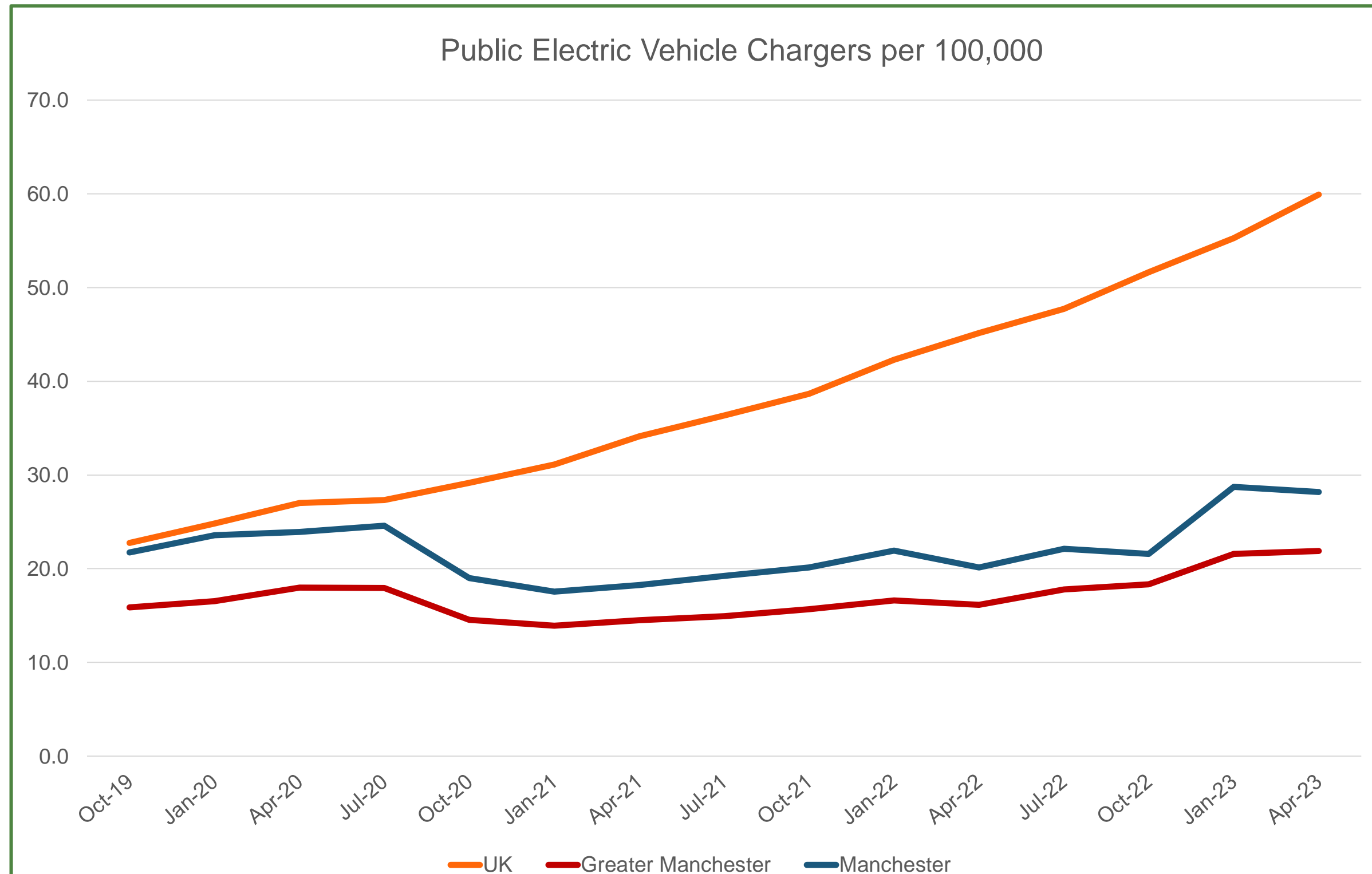
This graph shows trips into Manchester City Centre by mode during the morning peak. The number of trips has not fully recovered since the covid 19 pandemic. The trend of growing numbers on metrolink and shrinking numbers of car users has continued.

Source: TfGM, [CityCo](#)



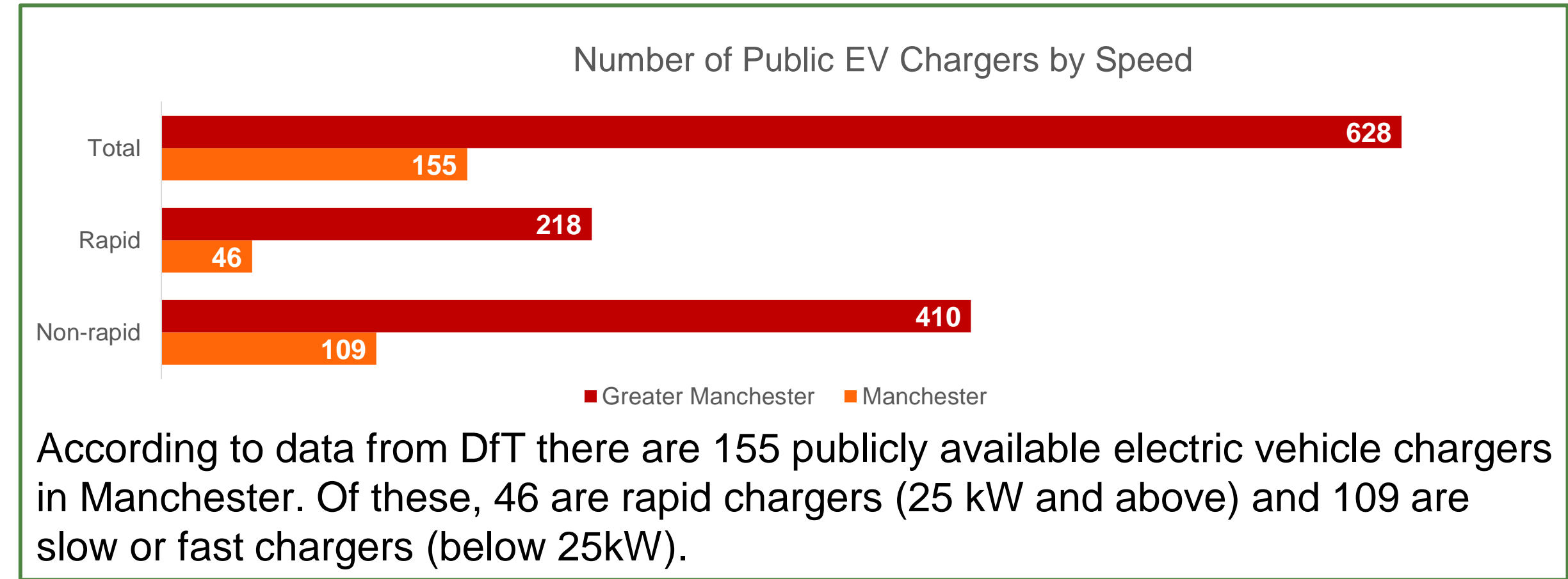
# Electric Vehicles

The transition to electric vehicles (EVs), with uptake increasing from <2,000 EVs today to over 140,000 by 2038, drives a demand for EV chargers to be installed across all areas. According to the LAEP around 72,000 domestic chargers would be installed (one for every home with potential for off-street parking) at a cost of £40m, along with multiple public charging stations (or hubs).

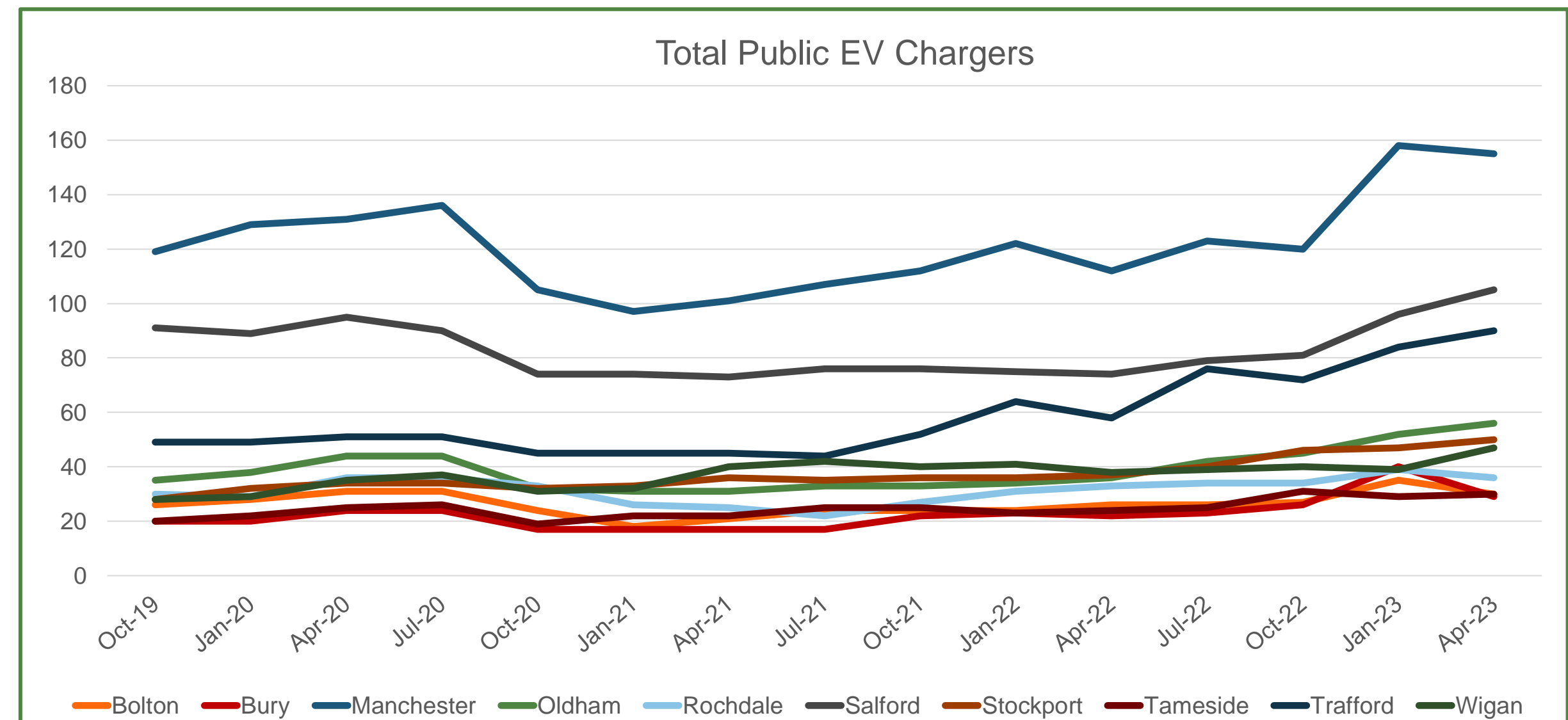


In Manchester there are 28.2 electric vehicle chargers per 100,000 people. This is well below the UK score of 59.9 but slightly above the Greater Manchester figure of 21.9.

Source: [DfT](#)



According to data from DfT there are 155 publicly available electric vehicle chargers in Manchester. Of these, 46 are rapid chargers (25 kW and above) and 109 are slow or fast chargers (below 25kW).

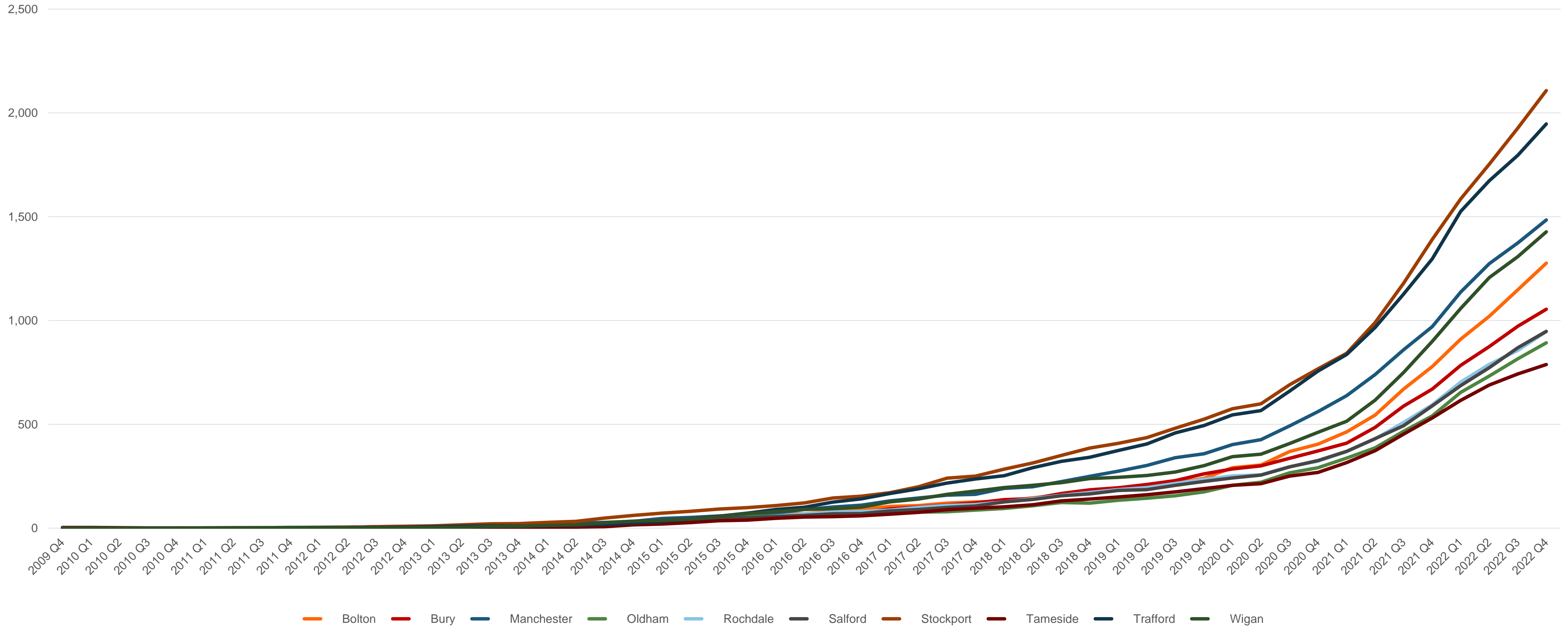


The number of publicly available electric vehicle chargers in Manchester is generally increasing and there are more chargers in Manchester than in anywhere else in Greater Manchester.

# Electric Vehicles

This graph shows the total number of private electric vehicles registered in Greater Manchester since 2010. This includes battery electric, plug in hybrid and range extended electric cars. As of the latest update, Q4 2022 there were 1484 private electric cars out of a total of 168188 cars registered in Manchester which represents 0.9% of all cars in Manchester.

Total Private Electric Cars



Source: [DfI](#)