

Evidence Summary

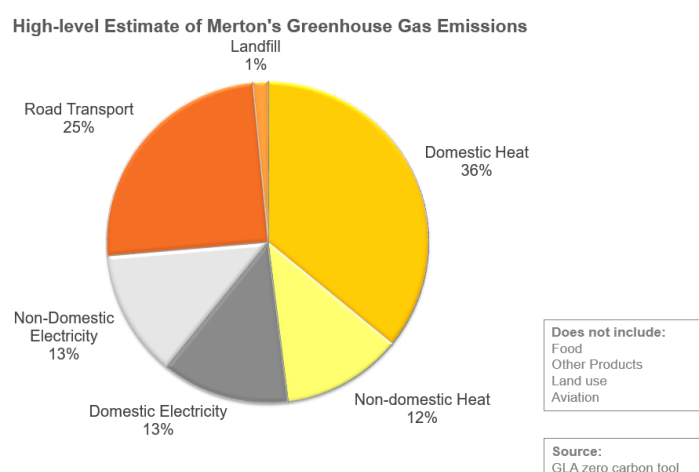
Greenhouse Gas Emissions in Merton

Introduction

1. Since the declaration of a Climate Emergency, Merton Council has been undertaking a review of the main greenhouse gas evidence which relates to activities in Merton. The review was primarily focused on our commitment to decarbonise the borough of Merton by 2050¹, and was seeking to answer the following questions:
 - What are the main sources of greenhouse gas emissions in the borough?
 - What are the main transformations that need to have taken place by 2050 to become carbon neutral?
 - What are the key factors that may enable or prevent a change from taking place?
2. This paper summarises our main findings of the review which will serve as a starting point in the development of a Climate Action Plan based on the best available evidence. This summary is being shared with the Climate Emergency Working Group to assist in their work to help steer the formation of the Climate Action Plan.

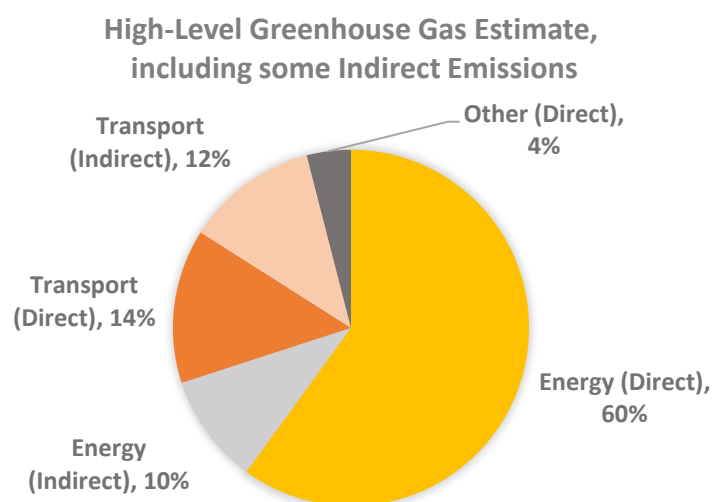
What are the main sources of greenhouse gas emissions in the borough?

3. Borough-specific emission estimates have been made by National Governmentⁱ and the Greater London Authority's work on pathways to zero carbonⁱⁱ. These focus on the most direct and measurable emissions relating to the use of fossil fuels in electricity generation, gas use and the use of petrol and diesel vehicles. These tools estimate that between **0.5 and 0.7 million tonnes of greenhouse gas emissions are produced by Merton each year.**



¹ Further work is being undertaken to consider our commitment to decarbonise Merton Council's buildings and services by 2030 which makes up roughly 2.5% of the borough's emissions. Further technical support is being sought to create a greenhouse gas inventory and develop decarbonisation pathways from which progress can be tracked.

4. Indirect emissions are those which occur outside of the borough, but happen as a result of actions inside the borough. Examples include emissions associated with the production and disposal of products such as food, or travel that happens outside of the borough by residents and business from inside the borough. These are harder to estimate and are much less certain, but the newly available SCATTER toolⁱⁱⁱ estimated that if some indirect emissions² are included, **Merton emits in the region of 1 million tonnes of greenhouse gas emissions each year.**



What are the main transformations that need to have taken place by 2050?

5. The Tyndall Centre have estimated that overall, **Merton will need to achieve a year-on-year decrease of greenhouse gas emissions of around 12.5%^{iv} to 2050**, to stay in line with International obligations. The following lists the main sectors that need to transform to ensure that the climate impacts of Merton's activities are minimised.
- a. Energy consumption in buildings
 - b. Fossil fuel transport
 - c. The carbon footprint associated with products and waste
 - d. Financial investments
 - e. The use of green spaces

What are the key factors that may prevent a change from taking place?

6. The evidence review has taken an initial look into the main sectors that require transformation. Merton intend to procure additional technical support to estimate Merton's greenhouse gas emissions and pathways to decarbonisation. Interim results from this piece of work can be fed into a future working group meeting. The

² The indirect emissions included from energy and transportation, but not from emissions associated with goods consumed within the borough.

rest of this paper provides further detail on each sector, summarising our best current understanding of:

- a. The pace and scale of change that needs to happen
- b. What actions may be most effective, given the current policy and financial situation.

Energy Consumption in Buildings

The pace and scale of change

7. There are around **88,000 households in Merton^v**. By 2050 greenhouse gas emissions associated with energy consumption in all of Merton's buildings will need to be near zero. To achieve this, nearly all buildings will need to have the following features:
 - a. Be highly energy efficient;
 - b. Use low carbon heating³ and cooking appliances (minimising the use of gas);
 - c. Be supplied by renewable electricity (through a green tariff);
 - d. Maximise on-site low carbon energy generation (e.g. solar PV); and
 - e. Store energy (e.g. in batteries) so that electricity can be used when needed.
8. Around **2,900 of Merton's existing buildings will need to decarbonise every year in order to achieve our target**. All new buildings likely to exist in 2050 will need to be zero carbon, or have the capability of becoming zero carbon without the need for expensive future adaptations.

Actions likely to be most effective

9. Nearly all buildings are outside the Council's ownership, so the most effective actions will be the individual choices made by owner occupiers, landlords and developers. New builds⁴ and rented properties⁵, tend not to be owned and occupied by the same person, so tight standards and a high level of enforcement are likely to be most effective.
10. For the 2/3^{vi} of households which own their own property, enabling residents and businesses to identify the right low carbon measures, reducing the up-front capital costs and enabling those investing to maximise personal benefits⁶, will likely be the most effective approach.
11. A one-size-fits-all approach to decarbonising buildings is not likely to be effective, because the location, orientation, building materials used, etc. will all have a bearing on the most suitable low carbon measures and their cost. For example, installing

³ At least half of all buildings would need to improve their energy efficiency in order to install efficient electric heating, in the form of heat pumps, and if currently using a combi boiler, would need to install additional hot water storage.

⁴ Likely to represent around 5% of the housing stock in 2050

⁵ Which currently make up around 1/3 of households (<https://data.merton.gov.uk/housing/>)

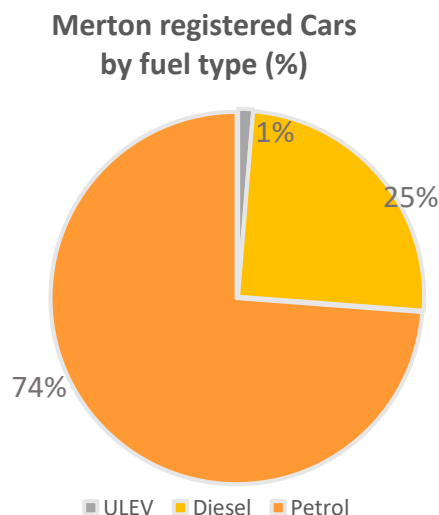
⁶ Such as bill savings or income from selling renewable power

electric heating in the form of heat pumps, can have significant benefits, but in some circumstances may result in the risk of increasing bills if the heat pump is of low quality, is installed poorly or is installed in an unsuitable building⁷.

Fossil fuel transport

The pace and scale of change

12. Merton's roads support **600 million km of vehicle use per year**^{vii}; the vast majority of which is run on fossil fuels. Petrol and diesel traffic constitute roughly equal mileage. Heavy Goods Vehicles accounted for a low proportion of traffic (4%). **72,000 vehicles are registered in Merton**^{viii}, with 68% of residents owning at least one car or van. Cars account for 90% of vehicles in London^{ix}; most of which are petrol cars⁸.



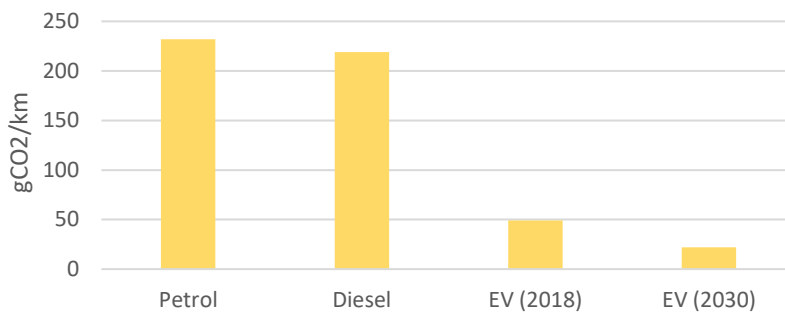
13. Merton will need to reduce the number of petrol and diesel road vehicles by **2,400 every year to 2050, and ensure that no through traffic is fossil fuel driven by:**
- a. Reducing vehicle use by promoting more active travel such as walking, cycling and using public transport; and
 - b. Replacing petrol and diesel vehicles with low carbon alternatives, such as electric vehicles⁹.

⁷ E.g. a building which does not keep in heat well.

⁸ In the graph, ULEV stands for "Ultra Low Emission Vehicle", typically an electric vehicle.

⁹ Greenhouse gas emissions from electric vehicles are derived from the emissions associated with electricity generation.

Comparison of greenhouse gas emissions from fossil and electric cars



14. When considering indirect emissions from transport, flights have a disproportionately high impact on greenhouse gas emissions compared to other forms of long distance transport, with rail being one of the best.

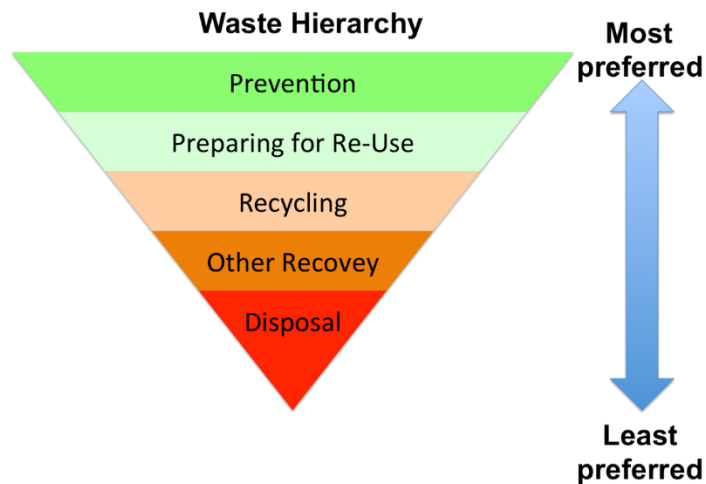
Actions likely to be most effective

15. Travel choices are made by individuals, businesses and services based on the suitable options available. Providing the right supporting infrastructure and information (including the benefits of active travel on health) for residents and businesses to make sustainable travel choices is likely to be the most effective way to support a major reduction in car use in favour of active travel. Reducing the impact of higher up-front costs of ultra- low emission vehicles and the availability of a wide variety of electric travel (electric bikes, buses etc) is also likely to be of benefit.

The carbon footprint associated with products and waste

The pace and scale of change

16. **Clear and applicable information is not available on greenhouse gas emissions associated with products used and consumed in Merton, or the waste that is generated as a result.** This is due to the indirect nature of the emissions (for example air miles associated with the transportation of imported food, energy associated with the production of goods, fertiliser use, and methane emissions from food production).
17. Applying the following principles is likely to help minimise greenhouse gas emissions from products and waste:
- Buy local.
 - Reduce meat and dairy consumption.
 - Follow the principles of the waste hierarchy, where waste prevention will save the greatest greenhouse gas emissions (e.g. by avoiding packaging).
 - Avoid buying surplus food and separately collect food waste.



18. Around 70,000^x tonnes of waste is collected by the Local Authority each year, of which around 40% is prepared for re-use or recycling, 60% is expected to go to energy recovery with virtually none being disposed of in landfill. UK statistics suggest that under half^{xi} of all waste is collected by the local authority.

Actions likely to be most effective

19. The purchase of goods is primarily made by local residents, businesses and services operating in Merton. Key action will likely involve the provision of information to help influence the purchase of sustainable goods.
20. For waste, ensuring, in the first instance, that waste generation is avoided wherever possible by influencing businesses and residences to encourage and adopt a low-waste culture and conform to the waste hierarchy, and raising public awareness to ensure that recycling services are used effectively where waste is unavoidable are likely to be important actions.

Responsible Investments

The pace and scale of change

21. **There are 11,000 businesses^{xii} registered in Merton** and 200,000 residents, many of which are likely to make investment decisions which influence the activity of a wide range of commercial enterprises. The Government's Green Finance Strategy^{xiii}, highlights the following three key considerations:
- a. Ensuring current and future financial risks and opportunities from climate are integrated into mainstream financial decision making;
 - b. Making finance available to support clean growth; and
 - c. Ensuring that commercial opportunities arising from the 'greening of finance' are accessible to Merton's investors, such as new green financial products and services.

22. **There is no information about the extent of responsible investments in Merton,** but nationally, around 10% of businesses are considering green investments^{xiv}.

Actions likely to be most effective

23. The review has not extended considering potential actions in detail.

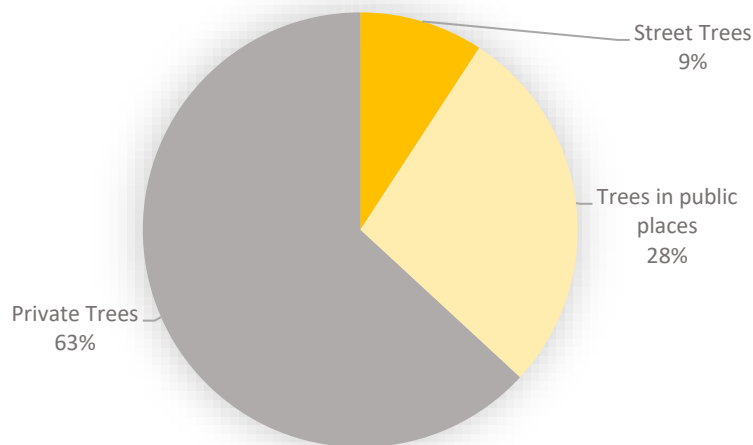
Greening Merton

24. Around 1/3 of Merton is designated as green space^{xv}. The borough has around 23% tree cover^{xvi} comprising around 220,000 trees. Each tree acts as a store for carbon and continues to absorb CO₂ throughout its lifetime. Other plants have a much lower carbon store due to the lower density of carbon contained within. **The review has not yet identified sufficiently clear data to estimate the carbon stored in Merton's trees, or the impact of planting additional trees on our ability to sequester further carbon emissions.**

25. The New London Plan sets a target to increase tree cover in London by 10% by 2050. In Merton this would be require the **maintenance of our current tree coverage, and an additional planting of 75 trees every year to 2050.** This could be achieved by:

- An increase in street trees.
- An increase in trees in green spaces.
- An increase in trees in private gardens.

Tree ownership in Merton



Actions likely to be most effective

26. Increasing tree and plant cover has many benefits, linked to health and wellbeing and the preservation of important habitats. Trees must be appropriately sited to ensure that spaces can cater for a variety of uses, and are safe for users. Most spaces available for tree planting are relatively small and disparate.

27. In order to get the greenhouse gas benefits trees must be cared for in the first 5 years, to ensure that they reach adulthood. Street trees must be carefully maintained and have higher costs associated with their care compared to trees in green spaces. Trees in private gardens may be decreasing due to the increase in paving front gardens.

ⁱ <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-2016>

ⁱⁱ <https://data.london.gov.uk/dataset/london-s-zero-carbon-pathways-tool>

ⁱⁱⁱ <https://www.anthesisgroup.com/scatter-carbon-footprint-reduction-tool>

^{iv} <https://carbonbudget.manchester.ac.uk/reports/E09000024>

^v <https://www.merton.gov.uk/assets/Documents/Local%20Plan%202020%20-%20Vision%20and%20Strategic%20Objectives.pdf>

^{vi} <https://data.merton.gov.uk/housing/>

^{vii}

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/801266/tra8904.ods

^{viii} <https://data.merton.gov.uk/environment/>

^{ix}

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/794446/veh0130.ods

^x Figures not yet checked by Merton Waste Team.

^{xi} UK Statistics on Waste suggest 12 % of UK's waste arisings are from households, and 19% are from commercial sources, <https://www.gov.uk/government/statistics/uk-waste-data>

^{xii} <https://www.merton.gov.uk/assets/Documents/Local%20Plan%202020%20-%20Vision%20and%20Strategic%20Objectives.pdf>

^{xiii}

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820284/190716_BEIS_Green_Finance_Strategy_Accessible_Final.pdf

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820284/190716_BEIS_Green_Finance_Strategy_Accessible_Final.pdf

^{xv} <https://www2.merton.gov.uk/AMR%202017-18.pdf>

^{xvi} <https://data.london.gov.uk/download/curio-canopy/3ceac73c-f79f-4f26-ac42-590b78eb2a35/curio-%20tree-canopy-cover-methodology-report-nov-2018.pdf>