

Carbon Emissions Report 2019 – 2020

November 2021



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About this document

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Executive Summary

0.1 Lambeth borough carbon emissions

Carbon emissions in Lambeth are falling. Since 2005, Lambeth's borough-wide carbon emissions have fallen by a yearon-year average of 3.5%. Continued at this rate, emissions would be approximately 60% below 2005 levels by 2030, and approximately 80% below 2005 levels by 2050.

In 2018, emissions for energy use in buildings and transport in Lambeth were 877,000 tonnes. This is 3% lower than in 2017. This equates to 2.7 tonnes per person, lower than both the London average of 3.2 tonnes per person and the national average of 5.2 tonnes per person.

However, despite this progress, following current trends, the borough of Lambeth is not on course to reach net zero emissions by 2050. Therefore, more work is needed, and at a quicker pace, to close the emissions gap.

In 2018 energy use in the home remained the largest source of emissions in Lambeth, and a larger share of the total (42%) than the UK-wide

average (27.5%). Within Lambeth homes, using gas for space and water heating was by far the largest source of emissions. Significant investment will be required to improve the energy efficiency of buildings in Lambeth, and to change the way buildings are heated, in order to make progress towards net zero emissions.

Transport emissions are a smaller share of Lambeth's total (24%) than the UK-wide average (36%), which reflects lower levels of car ownership, higher levels of public transport provision, and its inner London location. The vast majority of Lambeth's reported transport emissions are from on-road petrol and diesel vehicles. Aviation emissions (flights taken by Lambeth residents out-of-borough) are not reflected in government statistics for local authority emissions. However, if aviation emissions were included they would be a substantial portion of Lambeth's emissions, estimated by one source to be roughly equivalent to on-road emissions.

Based on a study commissioned from the University of Leeds, we are able to present an estimation of "consumption-based" emissions for Lambeth – the emissions released around the world from the goods and services consumed in Lambeth. This is estimated to be 8.32 tonnes of carbon dioxide equivalent per-person for 2018 – significantly higher than per person emissions for energy use in buildings and transport alone.

0.2 Lambeth Council carbon emissions

This report uses the term "Council-operated assets" to describe emissions data on council operations from buildings and vehicles that are directly operated by the council and schools. For April 2019 to March 20200, reported greenhouse gas emissions for these assets were 15,536 tonnes, or approximately 1.7% of Lambeth borough emissions. Schools were the largest source of emissions, followed by communal areas of housing estates. Comparing building by building, there was no noticeable increase or decrease in emissions from the previous year.

As set out in this report, Lambeth Council is taking big steps towards meeting is goal of net zero emissions on its estate by 2030, from electrifying its waste vehicle fleet, to large-scale retrofitting of schools and homes, to deep engagement with residents through its citizens assembly. The reporting period for this publication is 2019–20, and emissions reductions from works initiated in 2021-22 will be captured in future reports.

Lambeth Council does not have data on energy used within council homes on individual heating system (those not heated by a communal heating system). However, we estimate that including council homes within the council's carbon footprint would significantly increase the council's carbon footprint to approximately 84,000 tonnes, or 9.6% of Lambeth borough emissions.

Emissions data from council operations that are outsourced to third parties is not routinely available, as the council does not currently require contractors to report on the carbon emissions from contract delivery.

0.3 Methodology and data limitations

This report groups carbon emissions associated with Lambeth Council's activities into five main categories: in-house council operations, outsourced council operations, council leased assets, council purchases, and council decision making. While reporting on emissions from in-house council operations is relatively well-developed, it remains incomplete, and it has only been possible to present emissions data for 80% of schools. It has not been possible to compare reliably total inhouse emissions reported in the 2018–19 Baseline Report, with 2019–20 emissions levels reported here due to differences in the number of buildings for which energy data is available. However, this report does include year-on-year comparisons for individual buildings that are large emitters.

As noted above, data on the remaining four categories is incomplete, and this report presents case studies for these categories where data is available. The council is committed to improving its monitoring, reporting and mitigation of these emissions categories in future years, starting with emissions from outsourced council operations, and further information is set out in Annex 3 on these plans. However, it should be noted that reporting on the most indirect emissions sources (e.g. those associated with council decision making) is likely to remain a methodological challenge.

The Greenhouse Gas Protocol (GHG Protocol) provides a standard methodology for businesses and cities to report their emissions. This approach categorises emissions into "scope 1" (emissions released on-site from energy use, usually gas or transport fuel) "scope 2" (emissions released offsite from energy use, typically from generating electricity) and "scope 3" (indirect emissions from everything else an organisation purchases or sells). This approach has been adopted by a growing number of local authorities, and is presented in an Annex to this report. However, the "scopes" approach does not fully capture the range of emissions sources over which local authorities have varying levels of influence. Hence the main body of this report follows the approach described above, rather than the GHG Protocol methodology.

Borough-wide emissions are taken primarily from UK local authority national statistics, published by the Department for Business, Energy and Industrial Strategy (BEIS). BEIS provides sectoral emissions data, but not a detailed breakdown of emissions sources. Emissions reporting by SCATTER, a tool developed by Nottingham City Council, the Greater Manchester Combined Authorities, the Tyndall Centre and Anthesis, provides a more detailed sectoral breakdown, and includes estimations of some out-of-borough emissions sources like international aviation. It is presented in this report to add definition to top-line emissions reporting by BEIS. However, as some sectors, such as industrial emissions, are calculated for each local authority according to national averages, SCATTER data can present an inaccurate picture of the particular circumstances at the borough level, so is presented selectively here.

This report draws on recent research by the University of Leeds to present, for the first time, an estimation for consumption-based emissions for Lambeth residents. This is derived from analysis of UK-wide survey-based data on expenditure across all consumption activities, adjusted to reflect Lambeth demographics and assumed consumption patterns.

More information on methodology is given in Annex 3: Methodology and limitations.

0.4 Looking forward

From electrifying its waste vehicle fleet, to largescale retrofitting of schools and homes, to deep engagement with residents through its citizens assembly, Lambeth Council is taking big steps to start tackling the climate emergency.

Yet there remains significant work to do, both in terms of understanding the scale of the challenge, and designing interventions necessary to meet the council's emissions targets. The council is not yet able to present a fully comprehensive picture of its in-house emissions, and does not routinely measure the emissions from council commissioned services delivered by contractors. Further work is also needed to measure and report on emissions sources outside of the council's direct control, but where the council has primary responsibility for mitigation, such as emissions from energy use in council homes and properties commercially leased by the council.

This work is underway, and each year, this emissions report will provide a more complete picture, both of the council's emissions, and the steps being taken to tackle those emissions.



1 Lambeth Borough Emissions



Lambeth Borough Emissions

1.1 Snapshot of Lambeth borough emissions

877 ktCO₂

In 2018, carbon emissions for the borough were **877,000 tonnes (877 ktCO₂).ⁱ** This is approximately 0.3% of the UK's entire carbon emissions.



As illustrated by Figure 1, energy use in homes was the source of 42% of Lambeth borough's emissions.



Total emissions for Lambeth borough were almost 3% lower than in 2017.



Carbon emissions per person in Lambeth in 2018 were **2.7 tonnes**. This is lower than the London average of 3.2 tonnes per person and the national average of 5.2 tonnes per person. Figure 1: Lambeth borough CO₂ emissions, 2017 and 2018. *Source: BEIS (June 2020)*



Note that the above figures, published by the Department for Business, Energy & Industrial Strategy (BEIS), relate to emissions from energy consumption (largely gas, electricity and petrol/diesel) in Lambeth. They do not include emissions from other goods and services consumed by Lambeth residents, such as flights or food and clothing.

BOX 1: LAMBETH EMISSIONS IN CONTEXT



Lambeth borough's carbon emissions are larger than the national emissions of some countries, such as Burundi, Belize or Somalia.^{II}



Per person emissions in Lambeth of 2.7 tonnes are equivalent to the emissions released from one return trip flight from London to Tokyo.^{III}



One tonne of carbon dioxide is difficult to picture, but if it were contained in a spherical balloon, the balloon would be 10 meters across – more than twice the height of a Routemaster bus.



One tonne of carbon is released by driving the average passenger car 8,500 kilometres,^{iv} or in the process of producing 17 kg of beef, 50 kg of cheese or 2,500 kg of potatoes.^v

1.2 Lambeth borough emissions: buildings

A more detailed inventory of local area emissions is published each year by SCATTER, a tool developed in collaboration by Nottingham City Council, the Greater Manchester Combined Authorities, the Tyndall Centre and Anthesis. Due to differences in methodology, the figures differ slightly from those published by BEIS.

SCATTER estimates emissions from buildings according to the fuel type (e.g. gas or electricity) and the purpose of energy usage. As with the BEIS data, energy use in the home is the single largest source of emissions in Lambeth. As illustrated by

Figure 2, the majority of these emissions (66%) are from gas used to heat space and water. Electricity use for lighting, appliances and cooking is responsible for 25% of domestic emissions. This illustrates that Lambeth must prioritise improving the energy efficiency of its building stock, so that our homes can reach a comfortable level of heat with less energy, and shift to low carbon alternatives to gas like electric heat pumps and solar thermal. Generation of local renewable electricity will help to meet energy demand without increasing carbon emissions.

Figure 2: Emissions from Lambeth homes by activity and fuel type, 2018. Source: SCATTER (2021)





HEAT DECARBONISATION

Lambeth Council is commissioning a boroughwide technical study to develop a hugely detailed, address-level profile of domestic and commercial buildings in Lambeth, understand what can be achieved in terms of energy efficiency gains for each building type, and understand what the best low carbon technologies are for meeting heat demand for each building type and location. This research will enable teams across the council that work directly or indirectly on heat to move to feasibility studies of infrastructure and measures to reduce carbon emissions.

The research should also give Lambeth Council and other strategic partners a good picture of the costs and carbon reduction potential of the interventions available. The council expects this research to form a key part of the evidence base to support the development of a local area energy plan, that will be developed working with key partners within and outside the borough. We expect to publish this study in the second half of 2021.

1.3 Lambeth borough emissions: transport

According to BEIS data, transport emissions in Lambeth for 2018 were approximately 212 ktCO₂. This figure largely comprises road transport split between A roads (approximately 60% of total emissions) and minor roads (approximately 40% of total emissions). Emissions from rail are negligible. Unlike figures published by BEIS, SCATTER data includes transport emissions outside the borough from flights taken by Lambeth residents.¹ According to SCATTER, **aviation emissions are substantial, and only marginally lower than road transport emissions**.

The most recent data on the breakdown of road transport carbon emissions in Lambeth by vehicle type is from 2016 analysis by the London Atmospheric Emissions Inventory (LAEI). As illustrated by Figure 3, cars and taxis were the source of over half of all emissions.



Figure 3: Breakdown of on-road carbon emissions by vehicle type in Lambeth for 2016. *Source: LAEI (2016)*

¹ This is calculated by assuming that emissions from international flights into and out of the UK are uniformly distributed across the whole population. For more information see Annex 3.

1.4 National and London-wide comparison

Lambeth's emissions profile differs from the UKwide average. As illustrated by Figure 4, transport emissions are a significantly larger share of the UK's emissions (36%) than Lambeth's emissions (24%) whereas domestic emissions in Lambeth represent a far higher share of the total (42%) than for the UK (27.5%).

Lower relative transport emissions in Lambeth reflects the relatively low levels of car ownership, and higher levels of public transport provision compared to the UK average,^{vi} as is typical of an inner London borough.^{vii} Higher relative domestic emissions in Lambeth reflect below average energy efficiency levels of existing houses and flats compared to the national average, and the fact that Lambeth's housing stock is significantly older (61% pre-1945)^{viii} than the national average (35% pre-1945).^{ix} Older buildings are typically less energy-efficient due to features such as solid wall construction, single glazing, higher levels of uncontrolled ventilation and poor condition (e.g. damp walls). They require a 'whole-building' approach to energy efficiency retrofit, and present additional challenges related to heritage preservation, all of which increase the costs and complexity of retrofitting. This underlines the challenge that Lambeth faces to decarbonise energy use in the home.

As illustrated by Figure 5, emissions per person in Lambeth are towards the lower end of inner London boroughs. Total emissions per person are similar to those in its immediate Inner London neighbours, Southwark and Wandsworth.



Figure 4: Lambeth borough comparison with UK-wide emissions breakdown for 2018. *Source: BEIS (June 2020)*



Figure 5: Comparison of per person emissions in Lambeth with inner London boroughs for 2018.

1.5 Emissions trajectory

Since 2005, Lambeth's borough-wide carbon emissions have fallen by a year-on-year average of 3.5%. Continued at this rate, emissions would be approximately 60% below 2005 levels by 2030, and approximately 80% below 2005 levels by 2050. The Committee on Climate Change estimate that a reduction of over 85% on 2005 greenhouse gas emissions levels will be necessary for the UK as a whole to reach "net-zero" emissions.[×]

To date, reductions in Lambeth's emissions have been driven by the decarbonisation of the electricity grid, both through the removal of coal power and the expansion of renewable energy at the national level, by reduced fuel consumption by businesses and by reduced electricity use.^{xi}

Decarbonising heating systems, which are currently reliant on natural gas, and transport systems, which are currently reliant on petrol and diesel, will require substantial levels of additional investment and changes to policy. As the Committee on Climate Change has noted in their latest progress report to Parliament, the national policies required to drive emissions reductions "are generally far from complete and leave significant gaps".^{xii}

Figure 6: Lambeth borough carbon emissions 2005 – 2018, with trend line projection to 2030. *Source: BEIS (June 2020)*



BOX 3: LAMBETH'S CLIMATE CHANGE CITIZENS ASSEMBLY

Lambeth Council has convened a Citizens' Assembly following its declaration of a Climate Emergency and in recognition of the need for the whole borough to take genuine action to reduce emissions. The Citizens' Assembly was originally planned for 2020, but due to the pandemic, was postponed and moved online. It was held between 25th May – 3rd July 2021.

There were three phases to the Citizens' Assembly. The first was to learn about climate change, the second was to learn about what is happening locally and the third was to decide upon what recommendations should be taken forward. The participants deliberated over six weeks and developed solutions to the question:

'We are facing a climate crisis. How can we work together in Lambeth to address climate change and its causes fairly, effectively and quickly?'

The Sortition Foundation in collaboration with Traverse selected 50 of Lambeth's residents which broadly reflect the make-up of the borough. All of these participants underwent an onboarding process to ensure that they had everything they needed to participate fully. Work is still in progress to hold separate workshops and engage with key groups in order to ensure that young and disabled peoples' voices are heard in the assembly process.

1.6 Lambeth consumption-based emissions

The standard way to account for carbon emissions is to report on emissions that occur within a specific geographic area, for example, emissions from gas used in boilers, or petrol used in cars in Lambeth. This is referred to as "territorial" emissions, or sometimes "sectorbased" emissions.

However, goods and services consumed within one area can also be understood to drive carbon emissions outside of that area. For example, purchasing clothes in Lambeth, which have been imported into the UK, can be understood to drive emissions from cotton cultivation and garment factories overseas. These emissions can be referred to as "consumption-based" emissions. As illustrated by Figure 7, consumption-based emissions accounting includes emissions from goods and services produced and used in a city, and from those imported into a city, and subtracts emissions from goods and services produced in a city and exported elsewhere.

Understanding consumption-based emissions is important, because consumption patterns within a locality have a large impact on carbon emissions elsewhere in the UK and around the world. This is particularly the case for a place like Lambeth, where the majority of goods consumed are produced outside of the borough, and in which consumption-based emissions tend to be significantly larger than sector-based emissions.^{xiii}





Recent research by the University of Leeds^{xiv} estimates total consumption-based emissions for Lambeth in 2018 of 2,713,000 tonnes of carbon dioxide equivalent, or 8.3 tonnes per person. This is significantly higher than emissions levels set out in Section 1, which are based on a territorial methodology. Compared with other London boroughs, consumption emissions per capita in Lambeth are close to the median.

As illustrated by Figure 8 per person consumptionbased emissions have been falling since 2001, though at slower rate (2.2% per year) than territorial emissions. The most significant reduction (16.5%) occurred between 2008 and 2009, during the global financial crisis which had profound effect on household expenditure.^{*v}

The products with the largest consumption-based emissions are in the transport sector (petrol and diesel used in vehicles driven by Lambeth residents as well as emissions from the production of vehicles) and the energy sector (gas and electricity used to heat and power buildings). Of non-energy and -transport related products, food and non-alcoholic drinks, followed by restaurants and hotels, are the largest source of consumptionbased emissions.



Source: University of Leeds (2021)



Figure 9: Lambeth consumption-based emissions by final product for 2018. Left side: emissions from transport, energy in buildings, and "other" products. Right side: Breakdown of products in "other" category. *Source: University of Leeds (2021)*



As illustrated by Figure 10, it is estimated that meat is responsible for 65% of emissions released from all food and drink consumption in Lambeth. By contrast, fruit, vegetable and grain, starch and bakery products are responsible for only 12.7% of Lambeth food and drink emissions. This indicates that reducing meat consumption, in particular the most carbon-intensive types of meat like beef and lamb, is key to reducing consumptionbased emissions.

Figure 10: Breakdown of Lambeth consumption emissions for food and drink products for 2018, given in kilotonnes of CO₂e.

Source: University of Leeds (2021)



2 Lambeth Council Emissions



Lambeth Council Emissions

2.1 Categorising Lambeth Council emissions

For the purposes of this report carbon emissions associated with Lambeth Council's activities are grouped into five main categories:

- 1a. Council operations (council-operated assets and schools)
- 1b. Council operations (third party-delivered council services)
- 2. Council leased assets
- 3. Council purchases
- 4. Council decisions

As illustrated by Figure 11, these categories reflect the source of emissions, and their proximity to council operations. Category 1a describes direct emissions released from council-run services and schools², whereas Category 1b describes indirect emissions released from council services which are outsourced/delivered by a third-party. Category 4 describes emissions sources that are independent from the council, but which are affected by decisions that the council takes. Category 4 emissions are from activities that are neither undertaken nor commissioned by the council, and are therefore the most indirect emissions over which the council has an influence. Figure 11: Lambeth Council emissions categories.



² This includes community schools (which are sometimes called local authority maintained schools) and foundation schools and voluntary aided schools. It does not include academies, free schools and private schools, which are independent from the local authority. Academy schools which occupy council property are considered council leased assets.

Table 1 provides examples of emissions sources within each category, and summarises the quality of the emissions data the council has access to in each category. This list is not exhaustive. To enable consistency and comparability across local authorities, Lambeth Council is also reporting its carbon emissions according to the widely used international accounting tool, the Greenhouse Gas Protocol, using the Greenhouse Gas Accounting Tool developed by the Local Government Association (LGA). For more information see Annex 2.

Table 1: Lambeth Council emission category examples

Category		Examples	Emissions data
1. Council operations	a. Council-operated assets and schools	Lambeth Town Hall, Civic Centre and other council offices Lambeth parks buildings and facilities Community schools, foundation schools and voluntary schools Libraries Lambeth owned and operated vehicles Communal areas of council housing estates Lambeth lampposts	Data is available for most operated assets and most schools
	b. Third party- delivered council services	Leisure centres run by contractor Transport emissions from a waste contractor Transport emissions from contracted taxi service for social care On-site emissions from construction contractor Communal and office areas of council estates which are managed by a Tenant Management Organisation Repairs and maintenance service Accounting, legal, auditing, and other consulting services Other ancillary services	Data is available for leisure centres and transport emissions from waste services No data is routinely recorded from other third-party delivered services

Category	Examples	Emissions data
2. Council leased assets	Residential units of council homes The council's voluntary and commercial property portfolio Academy schools occupying council property	No data is routinely recorded from most council homes or the council's commercial/voluntary property portfolio Data is available for emissions from communal heating systems
3. Council purchases	Embedded emissions in construction materials purchased by the council and its contractors Embedded emissions in IT equipment purchased by the council and its contractors	No data is recorded on council purchases
4. Council decisions	Transport and energy emissions arising from developments granted planning permission Transport emissions influenced by the provision of transport infrastructure/transport planning Emissions from the treatment of waste generated by Lambeth residents Emissions from Lambeth Council staff travel into work	Data is available for waste treatment No data is recorded for other categories

2.2 Emissions from council operations

2.2.1 Council operated assets and schools



For April 2019 to March 2020, reported greenhouse gas emissions for Lambeth Council operated assets and schools were approximately 15,536 tonnes (15.54 ktCO₂e). This is approximately 1.7% of the emissions for Lambeth borough, as reported above.



As illustrated by Figure 13, the largest single source of emissions in this category was electricity and gas use in schools. The council has emissions data for 58 schools out of a total of 72 in the borough.³

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Energy use in the communal areas of council residential estates and estate offices occupied by council staff, largely electricity used to power lighting, was the second largest source of emissions.^{xvi}

3 Schools are responsible for their own utilities. Not all schools provided details of their energy consumption to the council.

Figure 13: Lambeth Council emissions for operated assets and schools $(ktCO_2e)^{xvii}$



BOX 4: YEAR-ON-YEAR COMPARISON

It is not possible accurately to compare total 2019–20 council emissions with 2018–19 emissions due to differences in the number of sites covered by the dataset available. However, it is possible to compare the emissions of some of the largest emitters on a building-by-building basis, as set out in the table below:

Building	2018–19 emissions tCO ₂ e	2019–20 emissions tCO ₂ e	% difference
Town Hall ^{xviii}	500	540	+ 8
Civic Centre ^{xix}	198	241	+ 22
Pest control office	20	19	- 0.05
Brixton Tate Library	64	79	+ 23
West Norwood Cemetery and Crematorium	142	130	- 9
Falmouth House communal areas	94	71	- 24

Lambeth Town Hall and Civic Centre are part of a district heating system that includes two residential and commercial complexes. 2019–20 was the first full year of residential occupation, which explains the increase in reported energy consumption between 2018–19 and 2019–20.

Otherwise, as indicated by the above, while emissions from some buildings have decreased, emissions from others have increased and the percentage change is variable. There is therefore no overall observable trend between 2018–19 emissions data and 2019–20 emissions data. Emissions from council houses and council leased properties are classified as "leased assets" and reported in Section 3.



Apart from the incompleteness of the schools' data, we are confident that reported emissions capture the majority of council-owned and -operated assets. However, there remain a number of gaps, for example, most buildings where the council is a tenant such as Waterloo Library. The council will endeavour to record these sources in subsequent emissions reports.

See Annex 1 for a list of the largest emitters in the council's estate in each sector.

2.2.1.1 Schools

The council is responsible for funding capital works and maintenance in community schools (sometimes called local authority maintained schools) and in foundation and voluntary schools. The council has a central role and responsibility for decarbonising the council schools, and so their emissions are reported alongside council operated assets. Private schools, academies and free schools are independent from the council, and so their emissions are not reported in this section.

In 2019–20 reported emissions from Lambeth-funded schools were 6.56 $ktCO_2e$. As noted above, this is based on 58 of 72 schools reporting, so

Figure 14: Council-operated vehicles fleet composition (2021) and emissions (2019–20).



the actual figure will be higher. In 2021, Lambeth Council secured £6.65m of government funding to invest in the decarbonisation of Lambeth schools, and emission reductions from these works should be captured in future reports.

2.2.1.2 Council operated vehicles

Emissions from Lambeth owned and operated vehicles in 2019–20 were 279 tCO₂e. 70% of emissions from vehicles were from use of diesel vehicles including parks department maintenance

vehicles, with the remainder from petrol, and a small contribution (3%) from electric vehicles. This section does not include emissions from third-party operated vehicles (e.g. waste collection services, or taxi contracts) which are discussed in Section 2.2.

In April 2021, the council owned or leased 33 electric vehicles, 5 hybrid and 147 fuel vehicles. To achieve our target of being carbon neutral by 2030, the fleet will need to become entirely electric. The council is investing in EV charging infrastructure roll out across Lambeth.

2.2.2 Third-party delivered services

The council does not currently require contractors to report on the carbon emissions from contract delivery, so does not have comprehensive data on emissions from outsourced council services. Given the number and size of contracts awarded by the council, particularly in emissionsintense sectors such as transport services and construction, this is a significant gap in the council's emissions reporting.

The council plans to implement a phased approach for all current and future third-party contractors to report their annual direct emissions arising from contract delivery to the council. The council will endeavour to record these sources in subsequent emissions reports.

Two case studies are provided below of emissions from third-party delivered services.



2.2.2.1 Emissions from waste collection services

In 2019–20, emissions from refuse collection vehicles, operated by Lambeth's contractor Veolia, were 654 tCO₂e. This is more than twice the emissions from Lambeth's owned and leased fleet.

It represents a decrease of 0.1% from 2018-19 levels, which is due to a combination of 3% fewer miles travelled, and slightly lower emissions per mile.** The waste collection fleet is made up of rigid heavy vehicles, which travel over 400.000 miles around the borough collecting waste from households and businesses and transporting it to the waste disposal facility in Wandsworth. in line with Lambeth's Waste Strategy it is planned to transition to an all-electric fleet of waste and street cleansing vehicles by 2030 - see box 5. A project is underway as of summer 2021 to establish the charging capacity and infrastructure requirements for the waste depots to support this conversion.



2.2.2.2 Emissions from Lambeth leisure centres

Eight of Lambeth's leisure centres and facilities are operated by Greenwich Leisure Limited. In 2019– 20, emissions from these buildings totalled 3.53 ktCO₂e.

Data is not available for previous years.

Lambeth's leisure centres consume large amounts of energy for heating water and space and for lighting - between two and three times more energy per square metre than Lambeth schools. If all leisure centres and facilities were a council-operated asset, they would be the second highest emitting category of all council buildings after schools.



BOX 5: STEPS TO AN ALL-ELECTRIC FLEET FOR LAMBETH WASTE

Lambeth's street cleansing fleet already includes five electric small mechanical brooms (e-SMBs) and one dust cart. The first electric Refuse Collection Vehicle (e-RCV) joined the service in March 2021 after a trial in February 2020, with a second due early in the new waste contract. The second e-RCV will be a repurposed/ repowered vehicle. This means we will be taking an old RCV nearing the end of its life and replacing the diesel engine with an electric motor. From October 2021, under the new waste contract, all small vehicles supporting the services (such as vans) will be electric.

2.3 Council leased assets

Lambeth Council owns approximately 24,000 council homes, and is the proprietor of approximately 500 non-residential properties, including office space rented to commercial, voluntary and community organisations. These emissions sources are outside of the council's direct control, but the council has responsibility for their mitigation. The council does not capture data on the energy consumption of tenants, other than residential units that are served by a communal heating system for which the council is responsible.⁴

2.3.1 Council homes on a communal heating system

The council records data on energy consumption in council homes where a communal heating system is in place and served by the grid. In 2019–20, these sites were responsible for 19,748 tonnes of greenhouse gas emissions (19.75 ktCO₂e). This constitutes approximately 50 estates comprising over 300 blocks, with over 5,000 residential units. A proportion of these residential units are "leasehold properties" (e.g. those under Right to Buy leases) that are not managed by the council but share a heating system.

2.3.2 Council homes on a stand-alone heating system

As a landlord, the council has a responsibility to work with tenants to upgrade properties to improve their energy efficiency and introduce renewable and low carbon power and heating measures. However, the council does not have data for the emissions from council homes on stand-alone heating systems, as tenants are responsible for paying energy bills.

Assuming that the emissions profile of the average council home with a stand-alone heating system is equivalent to the emissions of the average Lambeth domestic property, total emissions would be approximately 50.07 ktCO₂e.^{xxi} As illustrated by Figure 14, estimated emissions from all council homes are approximately 4.5 times larger than emissions from Lambeth council operated assets, and therefore reducing these emissions must be a priority in the council's efforts to reach net zero on its own estate.

If emissions from all council homes are included as "council" emissions, then we estimate council emissions will be approximately 9.6% of Lambeth borough's total emissions.

Figure 15: Emissions from council homes compared to council operated assets (ktCO₂e)



Council homes on a communal heating system on mains gas

Council homes on a stand-alone heating system (estimated)

⁴ It is not possible to disaggregate energy use from heating residential units on a communal energy system, from energy use from the heating communal areas and on-site offices.

2.4 Council purchases

Most goods that are purchased have carbon emissions associated with their "life-cycle" – their production, transport, use and disposal. For example, the production of steel results in emissions from mining of raw materials like coal and iron ore, emissions from the production process in furnaces, emissions from transportation of steel products, and end-of-life emissions from disposal/recycling. These emissions can be understood to be "embedded" or "embodied" in products. Embedded emissions can be larger or smaller depending on the sustainability of the production process.

When Lambeth Council or its contractors purchase goods, the council is indirectly responsible for the emissions embedded in those goods. The council can mitigate these emissions by limiting the purchase of goods where possible and ensuring that goods which are purchased are produced in lowest impact way.

At present, Lambeth Council does not monitor the emissions embedded in purchased goods. A complicating factor is that there is no widely adopted methodology for calculating or reporting emissions embedded in various products which could consistently be applied across all council procurement. We are working with other London boroughs to establish the best approach for accounting for these emissions in future.

2.5 Council decision making

There are multiple emissions sources which are influenced by council decision making, but over which the council does not have direct control, or which the council is not directly responsible for. This includes, but is not limited to, the methods used to treat municipal waste, which is a decision taken by Lambeth Council on the treatment of waste generated by people who work, live and visit Lambeth; and emissions from the construction and use of new developments, over which Lambeth council has influence as a Local Planning Authority (LPA).

2.5.1 Waste disposal emissions

Emissions from the disposal of waste are complicated to attribute. According to the "polluter pays principle", manufacturers and retailers producing and selling the products and packaging that ultimately enter the waste stream should take responsibility for their end-of-life impacts. The purchasing and disposal practices of households and organisations have a big influence on the guantities and types of waste generated. And local authorities, by determining whether waste goes to incineration, recycling, landfill or other, have a big influence on emissions from the waste disposal process. Lambeth Council is working actively with other London boroughs to establish the most accurate, reliable and useful way to account for waste treatment emissions.

The BEIS and SCATTER data cited in this report only capture emissions from waste disposal facilities located within the reporting borough. As Lambeth's waste is largely treated outside of the borough,^{xxii} its emissions are not properly reflected in borough-wide data. Therefore, for the purposes of this report, the "Emissions Performance Standard (EPS) Ready Reckoner" is used, developed by the Greater London Authority (GLA) to allow for the comparison of emissions from London boroughs' waste management.

By weight, the majority of Lambeth's waste is disposed of through incineration (or 'energy from waste'), with smaller amounts disposed of through recycling and organics treatment. Lambeth does not send any waste to landfill.

2.5.1.1 Emissions from incineration

According to the Ready Reckoner, emissions in 2019–20 from waste disposal through incineration were 13,256 tCO₂e. This represents an increase of 1.2% compared to 2018–19, and an increase of 9.6% from 2017–18. The Ready Reckoner methodology takes into account emissions considered to be offset by energy from waste (the use of electricity and heat generated from the incineration process, in place of electricity and heat that would have otherwise been generated from fossil fuels).^{xxiii} As displaced grid electricity was lower carbon in 2019–20 than in 2018–19, fewer emissions were offset per unit of electricity

generated. Therefore, reported emissions have increased despite a reduction in tonnage sent for incineration (Figure 16).

2.5.1.2 Emissions from recycling

The Ready Reckoner applies a 'negative' emissions principle for recycling processes to represent emissions saved by reducing the need for new resources later. According to this methodology, Lambeth avoided 12,355 tCO₂e by sending waste for recycling in 2019–20 through avoidance of the emissions which would otherwise be needed to produce new products from new materials. Put another way, emissions from waste disposal through recycling were -12,355 tCO₂e. This compares to -11,397 tCO₂e for 2018–19. The limitation of this approach is that it obscures the actual carbon emissions released through the recycling process.

The methodology proposed by BEIS is based on the approach that only transport emissions to the facility would be "Lambeth" emissions, and that the emissions from treatment processes should be accounted for by the Waste Disposal Authority (the waste treatment facility). However, figures are reported here in acknowledgement of the fact that Lambeth Council has a responsibility to reduce emissions from the waste treatment process as the council determines how the borough's waste is treated.

2.5.1.3 Emissions from organics treatment

According to the Ready Reckoner, emissions in 2019–20 from organics treatment were -256 tCO₂e, again using the negative emissions principle. This compares with -215 tCO₂e in 2018–19. The difference is due to an increase in the amount of waste sent for organics treatment. The Ready Reckoner methodology for organics treatment takes into account emissions saved from avoided production of compost and fertiliser, and emissions considered to be offset by energy generation (as with incineration above).

2.5.2 Staff travel

Lambeth Council employs over 3,000 members of staff who work at sites spread across the borough including the Brixton Civic Centre and Town Hall, and libraries and other social care and community buildings. Staff commuting to and from work is a source of emissions over which the council has influence as an employer through the provision of cycling facilities, behaviour change initiatives and flexible working arrangements.

The council runs a staff travel survey to collect data on travel behaviours, which allows derivation of an estimate of average emissions from employee travel to and from work over one year. However, the 2021 survey which would capture data from 19–20 and 20–21 has been postponed and has not been completed at the time of publishing this report.

Figure 16. Weight of waste sent for different treatment types from Lambeth borough between 2017–2020



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ANNEXES



ANNEX 1: Largest emitters in council-owned buildings by sector

Council-operated assets

Housing

Table 2. The top ten emitting communal areas of properties in the council housing sector in order of total emissions.

	Site	Total con- sumption (MWh)	Total CO₂ (tCO₂e)
1	Notre Dame estate	993	275
2	Ethelred Estate	856	237
3	Southwyck House	434	120
4	William Bonney Estate	347	96
5	Falmouth House	256	71
6	Lambeth Towers	244	68
7	Roupell Park Estate	241	67
8	Bedford House	197	55
9	South Island Place	177	49
10	Spurgeon Estate	173	48
Total		3,843	1,065

Corporate

Table 3. The top emitting corporate properties in order of total emissions.

	Site	Total con- sumption (MWh)	Total CO₂ (tCO₂e)	% con- sumption from gas	kWh/m²
1	Town Hall	2331	540	49	N/A
2	Civic Centre	1129	241	68	N/A
3	Olive Morris House	937	234	29	80
4	Phoenix House	461	130	-6	251
5	Lambeth Walk Day Centre	190	39	78	N/A
6	Lambeth-occupied floors of Blue Star House	94	22	15	123
7	Pest Control Office	89	19	74	N/A
8	Rommany Road Depot Office	66	18	0	101
9	The Press	68	14	68	0
10	Landmark Ld Daycentre	58	12	75	41
Total		5,423	1,270		

Parks buildings and open spaces

Table 4. The top ten emitting properties in the parks department in order of total emissions

	Site	Total consumption (MWh)	Total CO ₂ (tCO ₂ e)	% con- sumption from gas
1	Lambeth Cemetery and Crematorium	764	148	90
2	West Norwood Cemetery and Crematorium	675	130	91
3	Brockwell Hall	272	53	89
4	Clapham Common Bandstand Cafe	76	21	0
5	Kennington Park Grass Pitch	68	19	0
6	Larkhall Park Garden and Pond	58	16	0
7	Clapham Common	51	14	0
8	Clapham Common Bowls Pavilion	49	14	0
9	Ruskin Park	48	13	0
10	Kennington Park Depot	45	13	0
Total		2,107	440	

Libraries

Table 5. The top emitting libraries in order of total emissions.⁵

	Site	Total con- sumption (MWh)	Total CO ₂ (tCO ₂ e)	% con- sumption from gas	kWh/m²
1	Clapham Library	495	109	62	859
2	Brixton Tate Library	378	79	73	262
3	Carnegie Library/Herne Hill Leisure	273	58	71	246
4	Black Cultural Archives	251	58	51	N/A
5	Streatham Tate Library/Tudor Hall	218	45	76	N/A
6	Minet Public Library	95	26	0	93
7	Durning Library	122	23	94	270
8	South Lambeth Tate Library	96	18	98	298
Total		1,927	415		

5 Waterloo Library has not been included, as the council rents space in an Oasis building and data was not available. Carnegie Library's heating system also serves Herne Hill Leisure Centre which is operated by GLL and cannot be disaggregated.

Schools

Table 6. The top ten emitting maintained, foundation and voluntary aided schools in order of total emissions.

	Site	Total con- sumption (MWh)	Total CO ₂ (tCO ₂ e)	% con- sumption from gas	kWh/m²
1	Walnut Tree Walk Primary School	129	504	95	3,565
2	Fenstanton Primary School	817	416	56	N/A
3	Evelyn Grace Academy	763	371	53	N/A
4	Lilian Baylis Technology School	792	345	46	177
5	Elm Court School	187	163	76	N/A
6	Henry Cavendish School (Balham)	111	151	86	349
7	Lansdowne School	106	143	85	294
8	Sunnyhill Primary & Nursery School	278	142	56	N/A
9	Bonneville Primary School	173	133	73	198
10	Clapham Manor Jmi School	159	130	75	159
Total		11,799	2,498		

Third party-delivered council service buildings

Leisure⁶

Table 7. Consumption and emissions from leisure buildings owned by Lambeth Council and currently operated by Greenwich Leisure Limited (GLL).

	Site	Total con- sumption (MWh)	Total CO ₂ (tCO ₂ e)	% con- sumption from gas	kWh/m²
1	Streatham Ice and Leisure	5,533	1,240	57	343
2	Brixton Recreation Centre ^{xxiv}	4,974	79	73	262
3	West Norwood Leisure	2,484	557	57	N/A
4	Clapham Leisure	2,682	527	87	462
5	Flaxman Sports Centre	637	127	84	426
6	Ferndale Community Sports Centre	147	33	54	336
7	Archbishops Park	73	17	51	715
Total		16,530	3,528		

6 Herne Hill Leisure Centre is not included below, as it has not been possible to disaggregate the gas consumption from the building with which it shares a boiler.

ANNEX 2: Emissions reporting by Scopes 1, 2 and 3

Carbon emissions are categorised as one of three 'scopes'. Scope 1 emissions are defined as direct emissions from owned or controlled sources, scope 2 emissions as indirect emissions from the generation of purchased energy, and scope 3 as all other indirect emissions that occur in Lambeth's value chain.^{xxv}

Table 8 shows Lambeth Council's carbon emissions broken down by scope. Most sources of scope 3 emissions have been omitted as we do not capture the vast majority of our contractors' carbon footprint at present. We have, however, included transmission and distribution losses, which are an unavoidable scope 3 emission from use of electricity from the grid.

The LGA tool for 2019–20 council emissions can be found as an addendum to this report.

Table 8. Carbon emissions (tCO₂e) by scope and source.

Emissions source	Scope 1	Scope 2	Scope 3
Gas use in buildings	6,072		
4			
Electricity use in buildings and street lighting		8,557	727
Owned or leased vehicle use	262	8	0.7
Sum	6,334	8,565	728

ANNEX 3: Methodology and limitations

Methodology

Detailed methodology for BEIS data as reported in sections 1.1 and 1.4 is available here.

The methodology for the consumption-based emissions study as reported in section 1.6 is available here.

Detailed methodology for SCATTER data as reported in sections 1.2 and 1.3 is available here.

To estimate emissions for the council, BEIS conversion factors for 2019 were applied to activity data obtained from across the organisation including gas and electricity usage, water supply and sewage and distance travelled by different vehicles.

Details and methodology for the consumptionbased emissions study can be found here. The Output Area Classifications (OACs) used to define the borough's consumption habits are based on the most recent census, 2011. The underlying model, the UKMRIO database, is updated annually and the time series is re-estimated to reflect any updates to data sources and methodological improvements. This means if results for 2001-2018 were re-estimated in 2022, they would be likely to change slightly. It should also be noted that the smaller the geography and the smaller the 'spend category' (e.g. health is smaller than food and fuel), the less confident we are able to be with the emissions estimates. The expenditure categories where the consumption impact is erratic or 'noisy' have a very low overall impact.

Data improvement

Emissions reporting is a developing area of work. Each year, a number of areas are identified where there is a need to focus on expanding data collection or improve the quality of data in order to support the council, residents and stakeholders to make more informed decisions on decarbonisation. Teams across the council are collaborating to put in place policy and data collection methods that will enable incorporation of more data in subsequent years.

The council is still building a comprehensive data set to allow full understanding of in-house emissions. Although the council has begun to gather data on emissions from commissioned services delivered by contractors, there is more work to be done, and this will be an area of focus for next year's emissions reporting. From 2022, suppliers will be required to report carbon emissions from delivery of their contract using the existing contract management platform, which will vastly improve the ease of collection and provide a starting point for refinement and analysis of data.

Further work is also needed to measure and report on emissions sources outside of the council's direct control, but where the council has primary responsibility for mitigation. This includes, for example, emissions from energy use in council homes and properties commercially leased by the council. It is anticipated that the housing stock condition surveys taking place in 2022/23 will improve the council's data in this area. It will also be necessary to agree on a methodology to improve the data on the council's commercial properties, as it is known that they contribute a significant proportion of scope 3 emissions due to the number of properties which fall into this category.

This report does not include a comparison between council emissions in 2018-19 and 2019-20. This is because the sets of buildings included in the emissions calculations are different, as is their categorisation, and so the two years cannot be compared like-for-like. A greater number of schools and leisure centres have been included in the 2019-20, whereas the 2018/19 report included private residential units on communal heating systems. Communal system emissions are reported here, but not included as a council operated asset. Therefore, we do not recommend comparing final figures. We are aiming to develop a consistent reporting methodology which will allow measurement and monitoring of progress towards our 2030 target.

Off-grid housing properties services by non-gas fuels such as oil are not included as the data was not available for this year, but it is anticipated that it will be included in future years' reporting.

The council has manually collected energy consumption data for 58 schools out of a total of 72 in the borough. This means that the actual figure for emissions will be higher than reported here. For those schools which reported consumption but where some months of data were missing, an average of the reported period were used in place of real data for those months. We will aim to increase the number of schools reporting their data in next year's report.

Electric vehicle mileage has been estimated based on available data. It is not a requirement, however, for operatives to record the mileage of a vehicle when serviced, and so estimates are approximate. EVs contribute a very small quantity of total emissions.

2022/21 Data Improvement Areas.

Area	Description	Next step
Schools	Emissions from gas and electricity use in community, foundation and voluntary aided school properties. The data for 2019/20 exists but is incomplete.	Agree methodology for obtaining data exhaustive of all schools' emissions.
Supply chain emissions	Emissions from activities related to delivery of a contract with Lambeth Council, by contractors.	Establish reporting protocol via the existing contract management system, for reporting for 2022/23. Guidelines for all contract managers including a requirement to report carbon emissions have been produced.
Commissioned services	Emissions from activities related to delivery of a contract with Lambeth Council, by contractors.	Establish reporting protocol via the existing contract management system, for reporting for 2022/23. Guidelines for all contract managers including a requirement to report carbon emissions have been produced.
Council influenced emissions – housing	Emissions from gas and electricity use in residential areas of council housing (communal areas are already included).	Agree methodology.
Council influenced emissions – commercial property	Emissions from gas and electricity use in properties leased to commercial tenants.	Agree methodology.

Endnotes

- i See 2005 to 2018 UK local and regional CO₂ emissions. BEIS, 2021. https://data.gov.uk/dataset/723c243d-2f1a-4d27-8b61-cdb93e5b10ff/emissions-of-carbon-dioxide-for-local-authority-areas Accessed May 2021.
- ii Global Carbon Atlas. http://www.globalcarbonatlas.org/en/CO2-emissions Accessed May 2021.
- iii Calculated using Atmosfair Calculate Flight Emissions tool https://www.atmosfair.de/en/offset/flight/ and Carbon Footprint Flight Carbon Footprint Calculator https://calculator.carbonfootprint.com/calculator.aspx?tab=3 . Accessed May 2021.
- iv Average CO₂ emissions from new cars and vans. https://www.eea.europa.eu/highlights/average-co2-emissions-from-new-cars-vans-2019
- v See Our World in Data. https://ourworldindata.org/food-choice-vs-eating-local. Accessed May 2021.
- vi 78% of UK households own a car compared to 42% of Lambeth households. See Percentage of households with cars by income group, tenure and household composition: Table A47. Office for National Statistics, 2019. https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure/datasets/ percentageofhouseholdswithcarsbyincomegrouptenureandhouseholdcompositionuktablea47
- vii See Energy efficiency of housing in England and Wales. Office for National Statistics, 2020. https://www.ons.gov.uk/peoplepopulationandcommunity/housing/articles/energyefficiencyofhousinginenglandandwales/2020-09–23
- viii Analysis for Lambeth by AECOM from The National Energy Efficiency Data-Framework (NEED).
- ix See English Housing Survey 2019 to 2020: headline report. UK Ministry of Housing, Communities & Local Government, 2020. https://www.gov.uk/government/statistics/english-housing-survey-2019-to-2020-headline-report
- x A reduction from circa 700 MtCO₂e in 2005 to circa 90-95 MtCO₂e, with the residual emissions in aviation, agriculture, industry and other sectors offset through land-use and "engineered removals". See Figures 1.2 and 5.9, Net Zero: The UK's contribution to stopping global warming. UK Committee on Climate Change, May 2019. https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf
- xi See Analysis: Why the UK's CO₂ emissions have fallen 38% since 1990. Carbon Brief, 2019. https://www.carbonbrief.org/analysis-why-the-uks-co2-emissions-have-fallen-38-since-1990. Accessed July 2021.
- xii See Page 19, Reducing UK emissions Progress Report to Parliament. UK Committee on Climate Change. June 2020. https://www.theccc.org.uk/wp-content/uploads/2020/06/Reducing-UK-emissions-Progress-Report-to-Parliament-Committee-on-Cli.__-002-1.pdf
- xiii Cities in Europe and North America tend to be "consumer" cities with significantly larger consumption-based emissions than sector-based emissions. See Consumption-Based GHG Emissions of C40 Cities (C40). https://www.c40.org/researches/consumption-based-emissions
- xiv Analysis for London Councils by the University of Leeds. Consumption-based greenhouse gas household emissions profiles for London boroughs. Dr Anne Owen, 2021. https://www.londoncouncils.gov.uk/our-key-themes/environment/consumption-based-household-emissions-profiles-london
- xv An equivalent fall in consumption-emissions between 2008 and 2009 was recorded across the whole of London. See https://www.london.gov.uk/sites/default/files/final_report_-_consumption_ghg_accounts_for_london_-_for_publication.pdf

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- xvi For residential assets, all gas consumption was attributed to communal heating systems for residential units, and all electricity consumption was attributed to communal and office areas. This disaggregates council-operated assets from council-leased assets.
- xvii Building categories include emissions from energy and gas use, with water use reported separately.
- xviii Emissions have been recalculated from the 2018–19 carbon emissions baseline report. New information has become available on the breakdown of energy use between the Triangle buildings which share a heating system (Civic Centre, Town Hall, the Press Ivor House, Hambrook House).
- xix Emissions have been recalculated from the 2018–19 carbon emissions baseline report. New information has become available on the breakdown of energy use between the Triangle buildings which share a heating system (Civic Centre, Town Hall, the Press Ivor House, Hambrook House).
- xx See Greenhouse gas reporting: conversion factors 2019. BEIS, 2020. https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting
- xxi Calculated by dividing BEIS domestic emissions in Lambeth for 2018 equally among 140,288 dwellings in Lambeth in 2018, of which 24,179 are local authority owned (MHCLG https://www.gov.uk/government/statistical-data-sets/live-tables-on-dwelling-stock-including-vacants) of which approximately 19,000 are on standalone heating systems.
- xxii See Western Riverside Waste Authority (WRWA) https://wrwa.gov.uk/waste-authority/
- xxiii See EPS Ready Reckoner Guidance. Eunomia Research and Consulting for the Greater London Authority, May 2019. https://www.eunomia.co.uk/reports-tools/eps-ready-reckoner-greenhouse-gas-guidance/
- xxiv Brixton Recreation Centre and International House have shared services. All consumption for electricity and gas for meters which serve the leisure centre are included in this figure, and may also include consumption for International House.
- xxv See Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. https://ghgprotocol.org/standards/scope-3-standard

