

# Policy and Sustainability Committee

10.00am, Tuesday, 30 November 2021

## City 2030 Net Zero Target Annual Report

Executive/routine

Wards

Council Commitments [18](#)

### 1. Recommendations

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- 1.1 It is recommended that the Policy and Sustainability Committee note:
- 1.1.1 The city has achieved emissions reductions of 8% between 2018/19 and 2019/20, based on the most up-to-date data available; and that the 8% reduction achieved exceeds the target of 6% for that period agreed by Committee in April 2021;
  - 1.1.2 That the figures presented in this report are provisional due to the publication of two datasets being delayed. Figures will be updated as soon as available, but it is expected that the impact on the total footprint will be negligible as the missing datasets account for less than 2% of the total city emissions;
  - 1.1.3 That main reductions come from the greening of the grid, a reduction in waste emissions as a result of Millerhill plant becoming operational; and a decrease in emissions from cars and vans;
  - 1.1.4 The future emissions reporting schedule for the year ahead;
  - 1.1.5 That Edinburgh is one of 95 global cities recently named as new generation of climate leaders on CDP 2021 A-List; meaning it has been recognized by CDP as a city that is taking bold leadership on environmental action and transparency; and
  - 1.1.6 That in 2020 and 2021, Edinburgh has been awarded with the maximum of six badges by the Global Covenant of Mayors for Climate and Energy recognising its climate mitigation and adaptation efforts.

**Andrew Kerr**

Chief Executive

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## City 2030 Net Zero Target Annual Report

### 2. Executive Summary

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- 2.1 This report presents the latest emissions inventory of the city of Edinburgh (2019/20), based on the most recent datasets available. The calculation methodology is based on the Global GHG Protocol for Cities (GPC)<sup>1</sup>.
- 2.2 This methodology and the boundary selected to monitor progress against the new net-zero target was detailed in the [2030 City target monitoring approach](#) report brought to the Policy and Sustainability Committee in April 2021.
- 2.3 The Council's own organisational emissions are additionally monitored and reported through Public Bodies Climate Change Duties reporting (PBCCD). The latest Council's PBCCD report, based on 2020/21 data, is also provided separately to the November Policy and Sustainability committee.
- 2.4 City emissions have decreased by 8% between 2018/19 and 2019/20, based on the most up-to-date data available. This exceeds the indicative target of 6 % which was set to achieve the interim 25% reduction in 2022/23.
- 2.5 In 2020 and 2021, Edinburgh has been awarded with the maximum of six badges by the Global Covenant of Mayors for Climate and Energy recognising its climate mitigation and adaptation efforts.

### 3. Background

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- 3.1 The City of Edinburgh Council declared a Climate Emergency in 2019 and committed to work towards a net zero emissions target by 2030 for the whole city.
- 3.2 As detailed in previous reports, Councils typically contribute to only 1-3% of their area-wide emissions and no one partner has all the answers, powers or resources to reduce city's emissions to net zero by 2030 acting alone. Thus, the Council has engaged with city partners to develop a city-wide 2030 Climate Strategy, also presented to the November Policy and Sustainability committee. This strategy sets out the strategic priorities for tackling climate change in the city, with high level

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<sup>1</sup> <https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities>

strategic actions the Council and key city partners will take to realise the ambition of Edinburgh becoming a net zero and climate resilient city by 2030.

## 4. Main report

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### 2019/20 Emissions

- 4.1 The net zero target is monitored using data with a two-year time lag, meaning the most recent data we have is for the year 2019/20, which corresponds to the year the Council declared a climate emergency and set the net zero target.
- 4.2 At the time of writing, two datasets which make up part of the city's footprint were not published yet:
- 4.2.1 SEPA was cyber attacked last December, causing significant delay in business waste data reporting. Business waste tonnages should be available in December 2021 and have been temporarily estimated to be equal to the previous year; and
- 4.2.2 Due to COVID-19, one of the datasets used to calculate emissions from industrial processes has been delayed too. Its publication is expected by December 2021. In the same way as for business waste tonnages, the previous year's figures have been used in the interim.
- 4.3 Figures will be updated as soon as data are available, but it is expected that the impact on the total footprint will be negligible as commercial waste and industrial processes together account for less than 2% of the total city emissions, and historically vary by small amounts year-to-year.

In 2019/20, city emissions totalled 2.243 million tonnes of carbon dioxide equivalent (CO<sub>2e</sub>). The majority comes from gas and electricity consumption in buildings (domestic, industrial and commercial), representing 70% of total emissions (stationary energy), followed by transport emissions (27%), as illustrated on Figure 1.

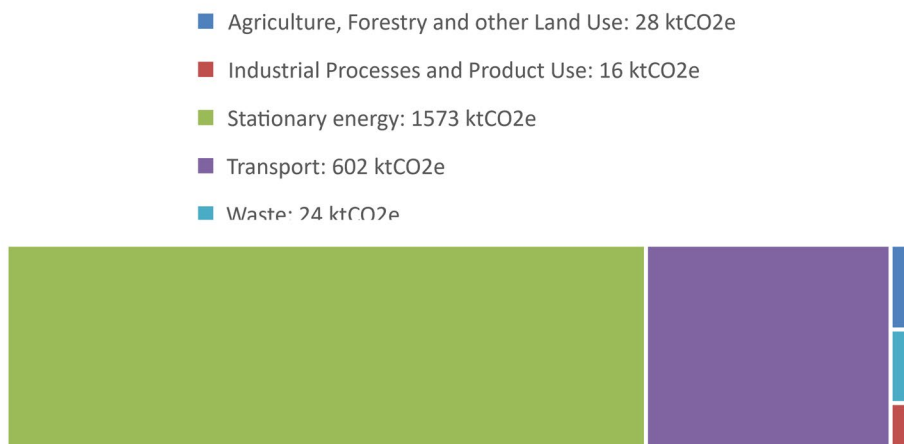


Figure 1: City of Edinburgh emissions inventory 2019/20

4.4 Total emissions can also be broken down per sector, as it can be seen on Figure 2<sup>2</sup>.

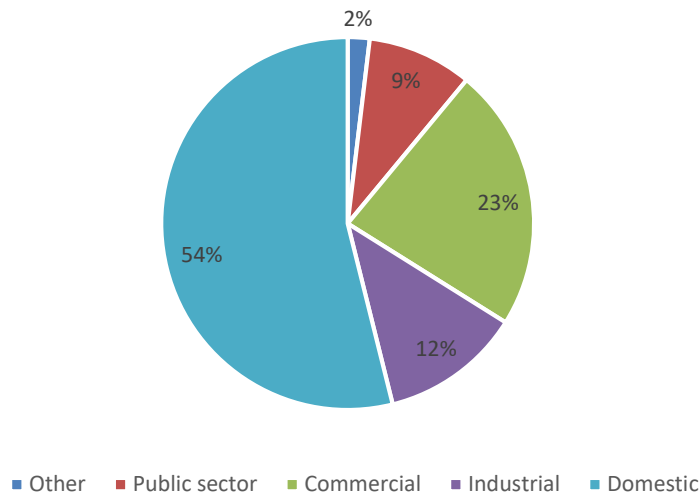


Figure 2: City of Edinburgh carbon footprint per sector - 2019/20 data

### Evolution of emissions

4.5 2019/20 emissions decreased by 8% compared to the previous year.

4.6 **Energy**-related emissions have dropped by 49% since 2010/11, predominantly thanks to the decarbonisation of the electricity grid<sup>3</sup> and to energy efficiency improvements<sup>4</sup>. Electricity and gas consumption respectively decreased by 43% and 6% since 2010/11 but now start to plateau as low hanging fruits like LED replacements have been taken. Between 2018/19 and 2019/20, both electricity and gas consumption have only decreased by around 1%. Electricity-related emissions have decreased by 10% compared to the previous year thanks to further decarbonisation of the grid. The evolution of energy emissions between 2010/11 and 2019/20 can be found in Appendix 4, Figure 4.

4.7 The road **transport** sector is a sector where emissions have almost flatlined. Emissions have only decreased by 2% between 2010/11 and 2018/19. Nevertheless, there has been progress in 2019/20, with an 8% reduction achieved in just one year. This has mainly been achieved thanks to a reduction in emissions from cars (-10%) and from vans (-9%). The evolution of transport emissions between 2010/11 and 2019/20 can be found in Appendix 4, Figure 5.

4.8 **Land use** emissions have increased due to methodological changes in BEIS datasets, but the impact in the total is negligible (around 1% of total emissions). Municipal **waste** emissions have decreased largely due to Millerhill becoming operational in 2019/20. Although final emissions from **industrial processes** are not

<sup>2</sup> It is important to note that a simplified approach has been taken to allocate transport emissions: emissions from vans and HGVs have been allocated to the commercial sector, Council's fleet and Council's taxi use to the public sector, and the rest of car emissions has been allocated to the domestic sector. As cars can also be used by businesses, the contribution of the domestic sector is overestimated on this graph.

<sup>3</sup> Between 2010/11 and 2019/20, the carbon content of a unit of electricity (in kgCO<sub>2e</sub>/kWh) decreased by 47%

<sup>4</sup> Between 2010/11 and 2019/20, electricity consumption decreased by 43 %.

available yet (as explained in paragraph 4.2.1), Scotland-wide data suggests a likely decrease of a few percentage points. Overall these three sectors account for less than 5% of total city emissions.

- 4.9 The main reasons for the 8% emissions reduction between 2018/19 and 2019/20 are listed in Table 1. It can be seen that 39% of the effort has been achieved thanks to the decarbonisation of the electricity grid. Other contributing factors include a reduction in waste emissions as a result of Millerhill plant becoming operational and reducing the amount of waste going to landfill, a 10% reduction in emissions from cars, and a slight reduction (1%) in gas emissions.

Table 1: Factors contributing to the City's 8 % emissions reduction between 2018/19 and 2019/20

Emission source	Emissions 2018/19 (ktCO <sub>2e</sub> )	Emissions 2019/20 (ktCO <sub>2e</sub> )	Change between 2018/19 and 2019/20		Contribution to total emission reduction
			%	tCO <sub>2e</sub>	
Electricity	701,099	629,118	-10%	-71,981	39%
Waste	73,947	19,917	-73%	-54,030	29%
Cars	408,039	366,817	-10%	-41,222	22%
Natural gas	878,959	868,420	-1%	-10,539	6%
Vans	110,296	100,767	-9%	-9,528	5%
HGV	83,811	81,973	-2%	-1,837	1%
All Other sources	170,591	175,810	3%	+5,219	-3%
<b>Total</b>	<b>2,426,742</b>	<b>2,242,822</b>	<b>-8%</b>	<b>-183,920</b>	<b>100%</b>

### Progress against targets

- 4.10 Annual targets have been calculated based on two interim milestones in 2022/23 (-25% compared to 2018/19 baseline) and 2026/27 (-50%), represented with diamond markers in Figure 3 and indicated in Table 2.
- 4.11 The 8% reduction achieved in 2019/20 exceeds the indicative target of 6% which was set to achieve the interim 25% reduction in 2022/23.

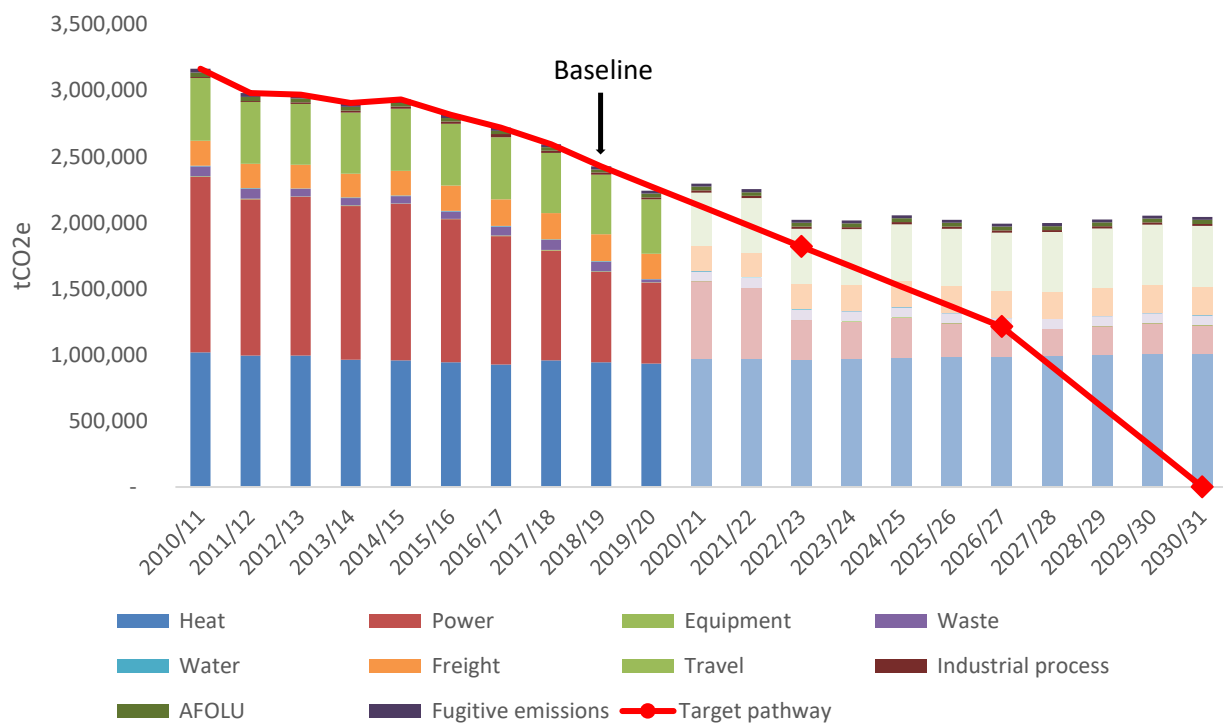


Figure 3: City's emissions based on the new Net Zero boundary. Darker shades represent historic emissions. Lighter shades represent Business As Usual projections based on various factors such as population growth, mileage forecasts, household numbers projections, school rolls projections, and grid decarbonisation (based on [UK Treasury Green Book](#).)

Table 2: Incremental annual targets – City target

Year	Annual target reduction (%)		Actual reduction	
	Compared to previous year	Compared to baseline	MtCO <sub>2e</sub>	% reduction compared to previous year
2017/18	N/A	N/A	2.595	5%
2018/19	Baseline year	Baseline year	2.427	6%
2019/20	6%	6%	2.243	8%
2020/21	7%	13%	Data available Autumn 2022	
2021/22	7%	19%	Data available Autumn 2023	
2022/23	8%	<b>25%</b>	Data available Autumn 2024	
2023/24	8%	31%	Data available Autumn 2025	
2024/25	9%	38%	Data available Autumn 2026	
2025/26	10%	44%	Data available Autumn 2027	
2026/27	11%	<b>50%</b>	Data available Autumn 2028	
2027/28	25%	63%	Data available Autumn 2029	
2028/29	33%	75%	Data available Autumn 2030	
2029/30	50%	87%	Data available Autumn 2031	
2030/31	100%	100%	Data available Autumn 2032	

- 4.12 It should be noted that the 2019/20 data corresponds to the year during which the Council set the new net zero target, and so do not fully reflect activity undertaken in support of the new target. Furthermore, the year 2020/21 has been marked by the COVID-19 pandemic and this will be visible in the datasets published in Autumn 2022, with action already underway to explore how the city can ‘lock in’ some of the changes seen during the pandemic, for example in relation to travel patterns.
- 4.13 The 2030 Climate Strategy presented to the Policy and Sustainability November Committee aims to set out actions to reduce city-wide emissions down to net zero by 2030, with commitments across six key strands of activity and in particular around the two main emission sources in the city: buildings and transport.

### Reporting arrangements and schedule

- 4.14 There is a range of performance reports which describe activity that supports progress towards the 2030 net zero target for the city. The reporting schedule for these are summarised in Table 2 below. Council emissions are reported annually through the PBCCD submission in October/November and in July/August via the Carbon Disclosure Project.

*Table 3: Reporting calendar for city-wide greenhouse gas emissions*

Key dates	City-wide emissions	Schedule
<b>November 2021</b>	Annual 2030 target progress report (2019/20 data)	Annual (newest data)
<b>Q1 2022</b>	Edinburgh by Numbers 2021 (2019/20 data)	Annual (data available previous November)
<b>June 2022</b>	City of Edinburgh Council Annual Performance report (2019/20 data)	Annual (data available previous November)
<b>July/August 2022</b>	Carbon Disclosure Project (2019/20 data)	Annual (data published previous November)

- 4.15 The Council participated in the Carbon Disclosure Project (CDP)<sup>5</sup> for the first time in late 2020, on behalf of the city. The CDP is an international non-profit organisation for companies and cities’ environmental reporting. It is the largest climate change focused data collection and assessment programme in the world. CDP evaluates the quality of the submission, benchmarks performance against other cities, and finds areas of opportunity for cities.
- 4.16 Edinburgh is one of 95 global cities recently named as new generation of climate leaders on CDP 2021 A-List; meaning it has been recognized by CDP as a city that is taking bold leadership on environmental action and transparency. Edinburgh is the only city in Scotland on the CDP A-list. To score an A, a city must have and

<sup>5</sup> <https://www.cdp.net/en/cities>

publicly disclose a city-wide emissions inventory, have set emissions reduction targets for the future and have published a climate action plan. It must also complete a climate risk and vulnerability assessment and have a plan to demonstrate how it will tackle climate hazards. To reflect the level of ambition needed to achieve 1.5°C targets from the Paris Agreement, the bar for entry to the A List has been raised this year. As a result, in 2021, less than one in ten cities scored by CDP (9.8% of such cities) received an A.

- 4.17 The Council signed up to the Global Covenant of Mayors<sup>6</sup> initiative in 2011 and to the Mayors Adapt initiative in 2015. Since 2016, both initiatives have merged within the Covenant of Mayors for Climate and Energy, which is a global coalition of city leaders addressing climate change by pledging to cut greenhouse gas emissions and prepare for the impacts of climate change. Submitting to CDP meets the reporting requirements for the Covenant of Mayors. In 2020 and 2021, two years in a row, Edinburgh has been awarded with the maximum of six badges recognising its climate mitigation and adaptation efforts.

## **5. Next Steps**

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- 5.1 Total city emissions will be revised once missing datasets become available.
- 5.2 The Council will continue to voluntarily disclose to CDP, with the next reporting cycle closing in July 2022.

## **6. Financial impact**

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- 6.1 There is no financial impact arising from this report. However, it should be noted that the financial challenges to achieve net zero emissions will be significant. It should be noted that investing in carbon reduction projects often results in wider co-benefits such as the creation of local jobs, improved air quality and public health, or reduced congestion (to name just a few).

## **7. Stakeholder/Community Impact**

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- 7.1 While the financial challenges in achieving net zero emissions will be significant, it should be noted that investing in carbon reduction projects often results in wider co-benefits such as the creation of local jobs, improved air quality and public health, or

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<sup>6</sup> <https://www.globalcovenantofmayors.org/>



reduced congestion. Moreover, the cost of inaction for the economy and the society far outweighs the cost of taking action now.<sup>7,8</sup>

- 7.2 This report has been assessed in respect of the three elements of the Climate Change (Scotland) Act 2009 Public Bodies Duties. In summary, the actions set out within the city-wide 2030 Climate Strategy and the Council Emission Reduction Plan (CERP) will help to mitigate and adapt the Council and city to climate change, improve social justice, economic wellbeing and environmental good stewardship.

## **8. Background reading/external references**

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- 8.1 [Public Bodies Climate Change Duties report 2019/20 – 10 November 2020](#)
- 8.2 [Edinburgh's disclosure to CDP – 2021 Cities Questionnaire](#)

## **9. Appendices**

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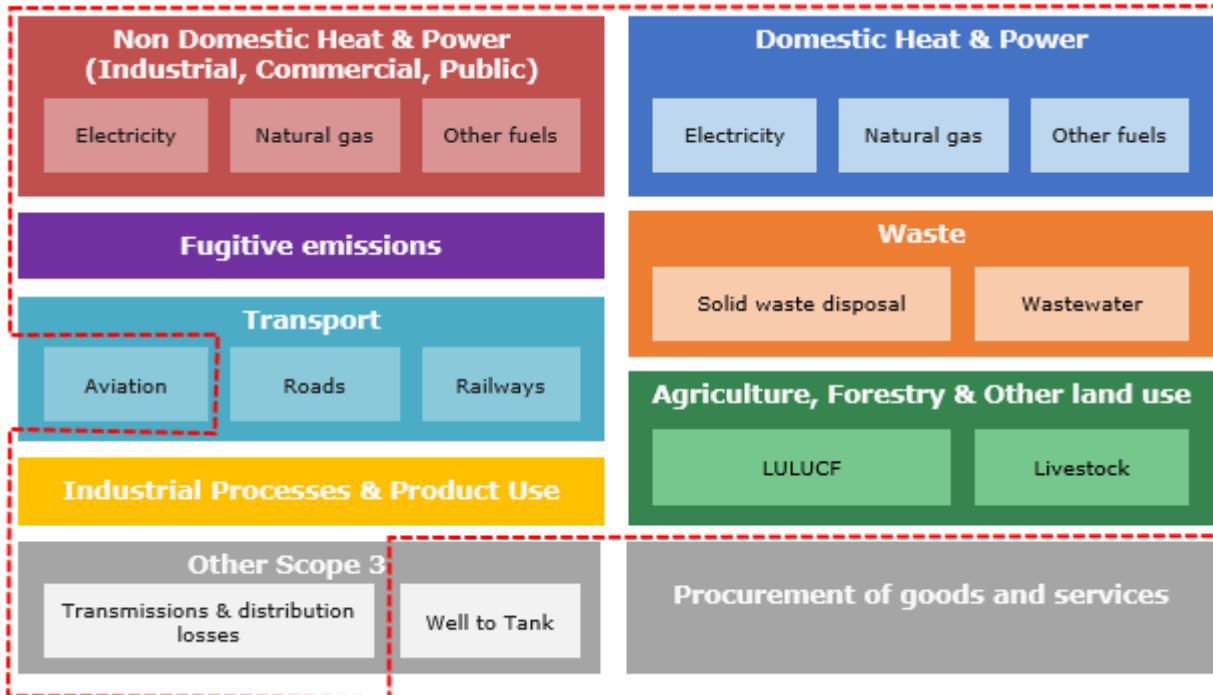
- 9.1 Appendix 1 - City-wide carbon footprint boundary.
- 9.2 Appendix 2 - List of emissions not covered by the net-zero boundary.
- 9.3 Appendix 3 - Datasets for the calculation of the City's net zero boundary.
- 9.4 Appendix 4 – Evolution of transport and energy-related emissions.

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<sup>7</sup> The UK National Audit Office estimates that for every £1 spent on protecting communities from flooding, around £5 in property damages and wider impacts can be avoided. [National Flood and Coastal Erosion Risk Management Strategy for England, Environment Agency, 2020](#)

<sup>8</sup> The failure demand costs for various levels of government due to the effects of global warming in Scotland can be estimated at £771 million and £956 million due to air pollution per year. [Wellbeing Economy Alliance, "Failure Demand: Counting the costs of an unjust and unsustainable economic system"](#), Mark Anielski, Anna Chrysopoulou and Michael Weatherhead, Sept 2021

## Appendix 1 - City-wide carbon footprint boundary



## Appendix 2 - List of emissions not covered by the net-zero boundary

Emission source	Rationale
<b>Well-to-tank (WTT)</b>	Well-to-tank emissions are fuel lifecycle emissions, occurring “upstream” from the point of use of the fuel. They result from the extraction, transport, refining, purification or conversion of primary fuels to fuels for direct use by end-users and the distribution of these fuels. They are classed as Scope 3 according to the GHG Protocol. They are considered as out of the net-zero boundary because the latter focusses on territorial emissions and covers Scope 1 emissions (direct emissions occurring within the boundary) and Scope 2 emissions (indirect electricity-related emissions). It also includes some Scope 3 emissions from transmission and distribution losses in the electricity network.
<b>Water supply</b>	The majority of energy consumption for the water network are covered under the stationary energy > non-domestic category, and Scottish Water's transport-related emissions are included in the Transport category. Process emissions from wastewater treatment are included under the wastewater category.
<b>Aviation</b>	The net zero boundary focusses on Scope 1 and 2 emissions only. Aviation emissions include Scope 3 emissions which occur outside of the territorial boundary and are therefore excluded from the baseline. Scope 3 emissions are not under the direct control or influence of the City. However, it is recognised that aviation emissions are significant and that they should be tackled. The Council's “Protocol for long distance UK travel” establishes rail over air as the Council's preferred choice for UK travel on Council business and the 2030 Climate Strategy includes actions to support transport behaviour change, including reducing flying.
<b>Procurement – Consumption of goods and services</b>	Consumption-related emissions consider the carbon impact (manufacture and transport) of all the goods purchased in the city, even if those were manufactured outside of the city. The Council is following a “production-based” approach to calculate the City’s carbon footprint, meaning that the scope is focussing on territorial emissions, including from goods that will be exported. The calculation of consumption-related emissions is very complex and there is no standard methodology at the moment. Consumption-based emissions do not have to be reported officially by any country. However, it is acknowledged that these emissions are very significant and that they should still be addressed. Although consumption-based emissions are not included in the net zero boundary, they are still being covered by the Sustainability Programme and the 2030 Climate Strategy includes actions to help tackle these emissions.

## Appendix 3 - Datasets for the calculation of the City's net zero boundary

Figures are based on the following publicly available datasets:

- Sub-national electricity sales and numbers of customers, BEIS
- Sub-national gas sales and numbers of customers, BEIS
- Sub-national estimates of non-gas, non-electricity and non-road transport fuels, BEIS
- Road transport energy consumption at regional and local authority level, BEIS
- Household and business waste tables, SEPA
- Scottish Water carbon footprint (published in their annual report)
- Local authority area statistics database, Scottish Government
- Number of livestock by region and sub-region, Scottish Government
- UK local authority and regional CO2 emissions national statistics, BEIS
- Greenhouse Gas Inventories for England, Scotland, Wales & Northern Ireland, NAEI
- Projected Population of Scotland, NRS Scotland

## Appendix 4 – Evolution of emissions from energy and transport

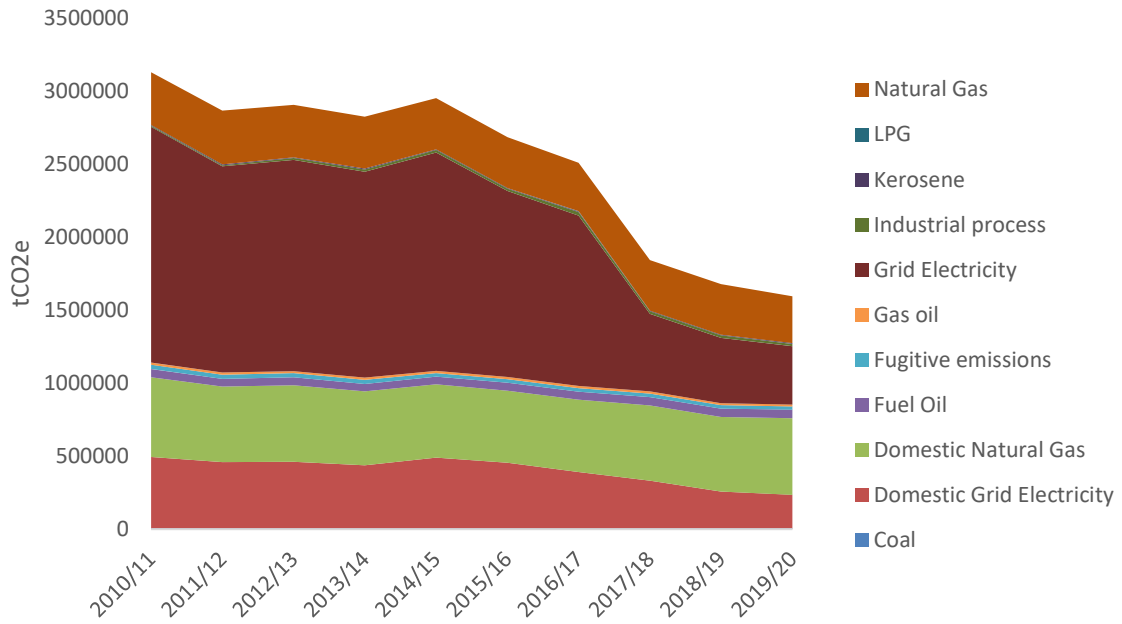


Figure 4: Evolution of energy-related emissions

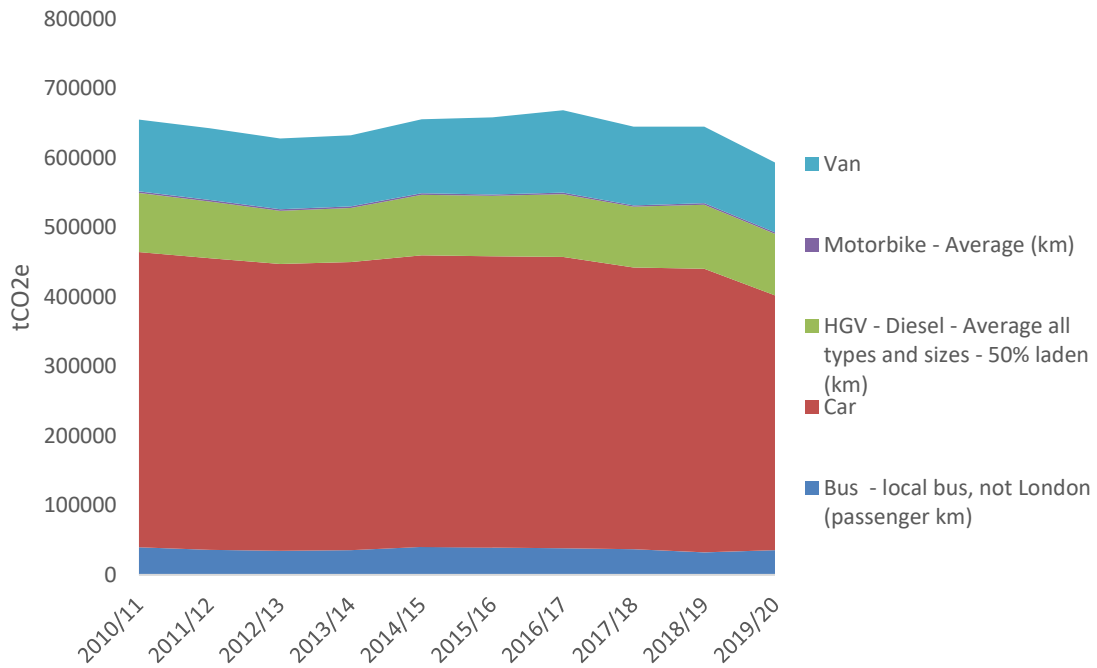


Figure 5: Evolution of transport emissions