Behavioural change

Cyclists, Copenhagen.
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Buildings and construction account for around 40% of carbon emissions globally. Data shows that a net-zero future will mean huge changes to our lifestyles: in the way we travel, heat our homes, choose our food and what we buy.

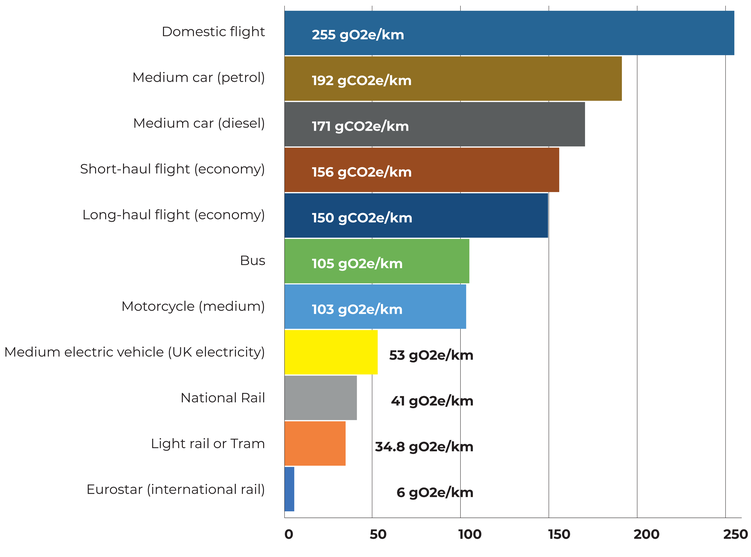
What is your carbon footprint?

Carbon dioxide is a gas, but it is measured by weight. Carbon emissions of a building or vehicle for example, are normally reported in tonnes or kilogrammes of CO_2 but sometimes they are expressed as CO_2e – the equivalent of CO_2.

Your personal carbon emissions, your 'carbon footprint', comes down to the lifestyle choices you make and is expressed in tonnes of carbon per year.

Organisations can reduce their corporate carbon footprints by measuring what they do and targeting annual reductions. Many are now signing up to the United Nations 'Science-Based Targets' scheme.

Comparing carbon footprint of transport options



Household emissions – heating and powering our homes

Edinburgh's 232,000 households contribute 30% of the city's annual carbon emissions.

A typical Edinburgh household carbon footprint is estimated at 11 tonnes of CO_2 per year or, 6.4 tonnes per year, per person. We can reduce this significantly through behaviour changes that also benefits our economy, health and wellbeing.

Analysis shows that household savings of more than 30% are possible and upgrading a property's energy-efficiency leads to even better results.

Private transport and 20-minute neighbourhoods

The movement of people, goods and services around Edinburgh accounts for around 30% of carbon emissions and significant savings are achievable.

Approximately 60% of Edinburgh households have access to one or more cars and, every day, sixty thousand residents drive to their jobs within the city. There are over 200,000 registered vehicles, of which 178,000 are private vehicles that contribute more than 400,000 tonnes of CO_2 annually to Edinburgh's emissions.

Electric cars, buses and trams will reduce this figure over time, but we also need to consider congestion and healthier lifestyles. More than half of all personal vehicle journeys are less than 5km, this is a breakdown of types of journey:

Shopping, leisure including eating out or entertainment	44%
Commuting	31%
Visiting friends and family	8%
Education	7%

One proposal to reduce private car journeys across the city is to create sustainable '20-minute neighbourhoods' where local services and amenities are accessible within a short trip from home to promote walking, wheeling, cycling and shared or public transport.

In some parts of Edinburgh this is already possible, but many others will need significant changes to reduce the need for car travel. Cycling and pedestrian-friendly streets are part of the plan for more pleasant forms of urban living, with lower impacts on the natural environment.

Typical demolition sites, with the building being 'thrown away'. © HES.

Carbon Crime Scene. © HES.

Edinburgh Airport. © HES.

Air travel

In 2019, UK citizens took on average 1.9 holidays abroad and 3.9 holidays in the UK.

Of 14.7 million passenger journeys from Edinburgh Airport, 35% were to other UK airports, 53% to Europe and 6% were long haul trips. The carbon emissions associated with flying were estimated to be 375,000 tonnes per annum, or 15% of the city's total emissions in 2020.

Air travel contributes 6% of the UK's annual emissions, but they do not feature in Edinburgh's carbon budget because flying emissions occur outside the city. Most emissions come from:

Holiday travel	61%
Visits to friends and family	25%
Business trips	11%

Dietary changes

Meat and dairy production have higher carbon emissions compared with plant-based foods.

A typical balanced meat-eating diet results in carbon emissions of around 2.1 tonnes per person per year, whereas a plant-based diet has emissions of less than 1 tonne per year.

Food waste levels per Edinburgh resident are up to 156kg/person per annum, with plans to reduce these by 25% by 2025.

Eating less red meat and dairy combined with reducing food waste could lower our individual personal carbon emissions by up to 500kg per year, saving the equivalent of 24% of Edinburgh's estimated food-based emissions.

Clothing and textiles

Carbon emissions from clothing and textiles contribute a considerable amount of carbon. Research suggests that in 2017 emissions from clothing and textiles made up 4% of the total.

This amounts to around 98 KtCO2e/y for Edinburgh city, or approximately 180 kgCO2e per person. If we reduce the amount of clothing we buy every year, we could create an annual emission savings of 46,000 tonnes, or 2% of Edinburgh's 2020 emissions.

Typical consumption per food choices

Key

1. Beef (beef herd)
2. Cheese
3. Chocolate
4. Poultry
5. Sugar
6. Pork
7. Fish
8. Lamb/mutton
9. Wheat/rye
10. Fruit
11. Eggs
12. Coffee
13. Vegetables (root)
14. Maize/corn
15. Rice
16. Milk
17. Potatoes
18. Tomatoes
19. Olive oil
20. Pulses
21. Nuts
22. Dried fruits