

A pink brushstroke background with a textured, painterly appearance, featuring various shades of pink and purple.

A Brush With Climate

Climate info pack

In this info pack you will find:

- FAQs about climate change
- Trusted sources to learn more
- Co-benefits of climate action
- Jargon busting

Climate change - FAQs

What is climate change?

Climate change is the gradual change in Earth's average global temperature, resulting in changes to weather patterns.

How is climate change measured?

We measure climate change by comparing present-day global average temperatures to pre-industrial temperatures (pre-1850).

What's the difference between global warming, climate change, and climate action?

- Global warming is the change in temperatures resulting from the increased levels of greenhouse gases (GHG) in the atmosphere, such as carbon dioxide.
- Climate change is the change in Earth's average global temperature which results in changes to weather patterns over a long period of time.
- Climate action is the behaviour changes which all of us individually, and as a society, can implement to decrease the levels of GHGs which we emit into the atmosphere, thus decreasing global warming and slowing down climate change.

Is climate change caused by human activity?

Yes – human activity is responsible for the increased levels of GHGs in the atmosphere, which is causing a greenhouse effect where heat from the sun is trapped inside the atmosphere, causing global temperatures to rise. There is unanimous agreement among scientists that climate change is driven by human activity.

Why should we be concerned?

Climate change results in changes in weather patterns, meaning more extreme weather events like severe storms and droughts occurring more often. This impacts everybody, from coastal towns in Ireland which will become flooded more often, to farmers who depend on steady rainfall to water crops, to fishermen whose businesses will be impacted by warmer seas and changing migration patterns of fish.

Urban communities and towns will also be impacted – hotter summers becoming more frequent can lead to heat-related stress in cities with little tree cover, and increasing rainfall can stress floodwater infrastructure. Climate change also increases health risks and increases the factors that can put and keep people in poverty. These impacts will worsen over time if nothing is done, meaning that they will be felt even more strongly by our children and future generations.

Where can you learn more?

On the next page you will find links to resources and reliable sources of information on climate change.

Climate change - trusted sources

With so much information out there, it can be hard to know what sources are trustworthy.

Here we've provided a list of sources we use in our own research which provide impartial and easily-digestible information.



Copernicus Climate Change Service

climate.copernicus.eu

Copernicus is part of the European Union's space agency, providing free and open access to satellite data on Earth's atmosphere, climate and oceans.

For a breakdown of the latest climate science, search for the Copernicus Climate Bulletin or their Climate Now series on YouTube.



Environmental Protection Agency (EPA)

www.epa.ie

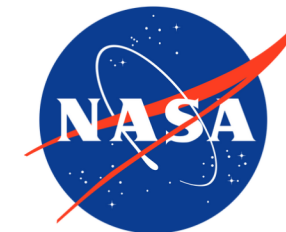
The EPA websites provides lots of resources about climate change and Ireland. Go to Environment & You → Climate Change to find out more about what's happening, what's being done, and what you can do to help.



Economic and Social Research Institute

www.esri.ie

The ESRI researches issues of economic and social importance to Ireland - go to ESRI → Research Areas → Climate to learn more about how climate change and climate action will impact Ireland.



NASA

science.nasa.gov/climate-change

NASA provides lots of user-friendly and interactive climate change info-graphics on a range of topics, including their Climate Time Machine and the Global Ice Viewer.



Climate Jargon Buster

www.climatejargonbuster.ie

Like a searchable dictionary, this website lets you search for commonly used words about climate change and gives you a plain English definition. You can also filter words by categories, for example Policy, Energy, Enterprise, Agriculture and Transport.

Climate action - individual actions and co-benefits

| | |
|--------------------------------------|--------|
| Save energy at home | € |
| Change your home's source of energy | € |
| Walk, bike, or take public transport | € ❤️ 😊 |
| Switch to an electric vehicle | € |
| Consider your travel abroad | € |
| Reduce, reuse, repair and recycle | € ❤️ 😊 |
| Eat more vegetables | € ❤️ |
| Throw away less food | € ❤️ |
| Plant native species | ❤️ 😊 |
| Clean up your environment | ❤️ 😊 |

If you're feeling unsure of what individual actions you can take, here are some suggestions - (you'll find more information on each of these on the UN website linked below).

Many climate actions have co-benefits - this means that doing this action will have a hidden benefit for other areas of your life. These can include **financial benefits** (saving you money short-term and/or long-term), **health benefits** (exercising more by cycling, for example), and **social benefits** (getting you more involved in your community or getting outdoors with friends).

It is important to remember that there is only so much individuals can do and that more government action is also needed. Starting the conversation is half the battle - a key climate action you can take at any time, not just during elections, is to **talk to your local councillor or TD**. By making them aware that climate action is important to you, you are signalling that more action will win them your vote.

Simply **talking about climate change is itself a climate action**, and once you start to think, you'll begin to notice how many areas of our life can be linked to climate change. Our hope is that, throughout this project, you will discover new ways to start climate conversations in everyday life.

Sources and more ideas:

<https://www.un.org/en/actnow/ten-actions>

<https://www.epa.ie/take-action/in-the-home/climate-change>

<https://climateambassador.ie/actions/communications>

Jargon busting

| Terms that have different meanings for scientists and the public | | |
|--|-------------------------------|---------------------------------------|
| Scientific term | Public meaning | Better choice |
| enhance | improve | intensify, increase |
| aerosol | spray can | tiny atmospheric particle |
| positive trend | good trend | upward trend |
| positive feedback | good response, praise | vicious cycle, self-reinforcing cycle |
| theory | hunch, speculation | scientific understanding |
| uncertainty | ignorance | range |
| error | mistake, wrong, incorrect | difference from exact true number |
| bias | distortion, political motive | offset from an observation |
| sign | indication, astrological sign | plus or minus sign |
| values | ethics, monetary values | numbers, quantity |
| manipulation | illicit tampering | scientific data processing |
| scheme | devious plot | systematic plan |
| anomaly | abnormal occurence | change from long-term average |

Scientific term – these are the words which scientists often use in our work – when taken out of context, these terms can easily be innocently misunderstood or purposefully framed in a misleading way.

Public meaning – this is what the public may understand by scientific terms which are not properly explained.

Better choice – these are terms which more accurately represent the true meaning of the terms in the first column.

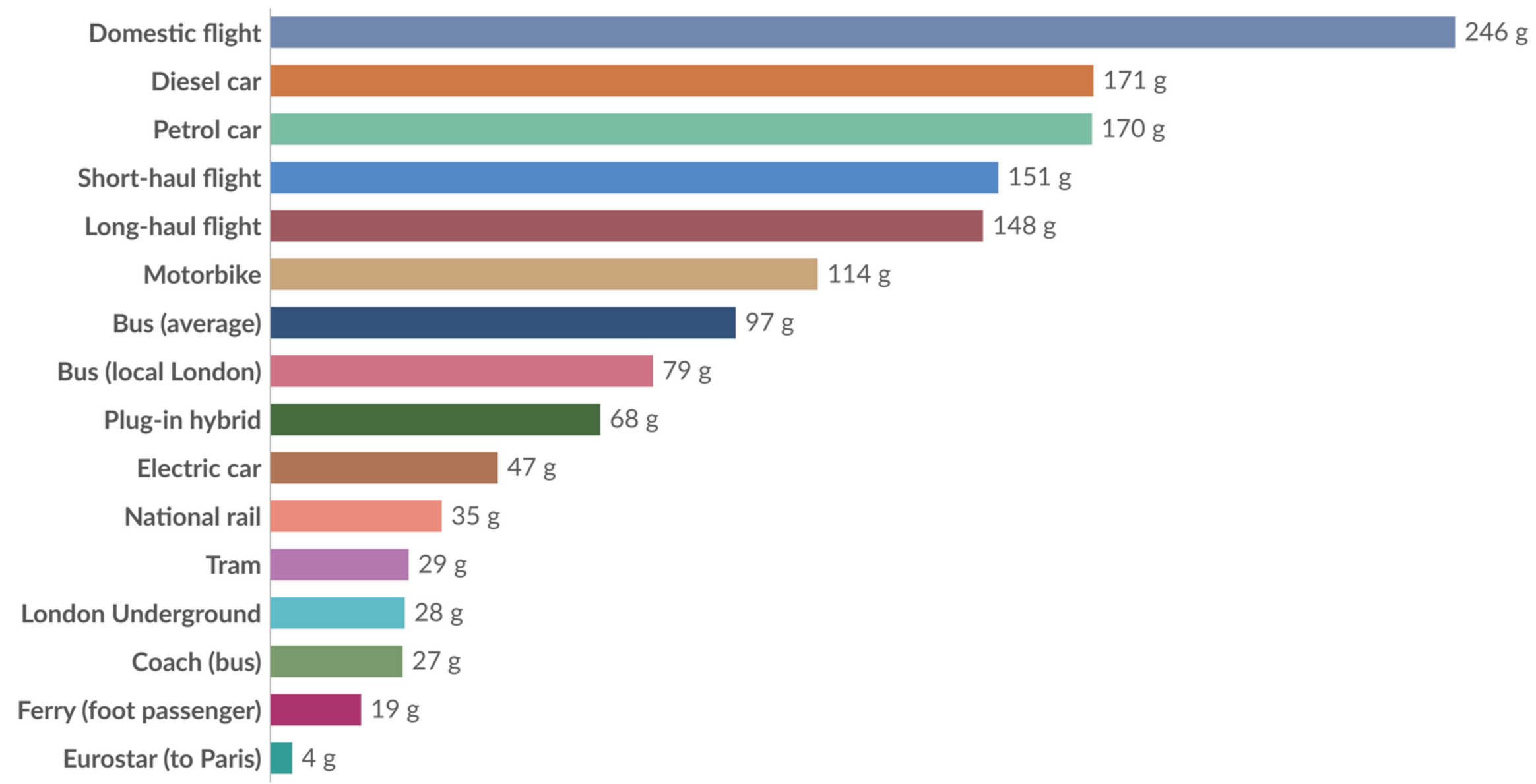
‘Communicating the science of climate change’
article by Somerville and Hassol in *Physics Today*, Oct. 2011

Carbon footprint of different types of transport

Carbon footprint of travel per kilometer, 2022



The carbon footprint of travel is measured in grams of carbon dioxide-equivalents¹ per passenger kilometer. This includes the impact of increased warming from aviation emissions at altitude.



Data source: UK Government, Department for Energy Security and Net Zero (2022) OurWorldinData.org/transport | CC BY

Note: Official conversion factors used in UK reporting. These factors will vary across countries depending on energy mix, transport technologies, and occupancy of public transport. Data for aviation is based on economy class.

1. **Carbon dioxide equivalents (CO₂eq)** Carbon dioxide is the most important greenhouse gas, but not the only one. To capture all greenhouse gas emissions, researchers express them in “carbon dioxide equivalents” (CO₂eq). This takes all greenhouse gases into account, not just CO₂. To express all greenhouse gases in carbon dioxide equivalents (CO₂eq), each one is weighted by its global warming potential (GWP) value. GWP measures the amount of warming a gas creates compared to CO₂. CO₂ is given a GWP value of one. If a gas had a GWP of 10 then one kilogram of that gas would generate ten times the warming effect as one kilogram of CO₂. Carbon dioxide equivalents are calculated for each gas by multiplying the mass of emissions of a specific greenhouse gas by its GWP factor. This warming can be stated over different timescales. To calculate CO₂eq over 100 years, we’d multiply each gas by its GWP over a 100-year timescale (GWP100). Total greenhouse gas emissions – measured in CO₂eq – are then calculated by summing each gas’ CO₂eq value.