Carbon footprint calculator and climate change information

Carbon footprint calculator

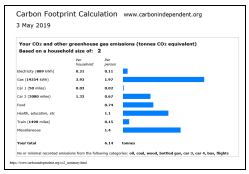
Complete this questionnaire to estimate / calculate your CO_2 emissions.

Do either a quick estimation (no bills needed) or a more accurate calculation of the CO_2 and other greenhouse gas emissions that you are responsible for, as an individual, over a 12 month period.

Updated in 2019/20
Read more.

In section 1, you enter household data, so that items such as household heating and car use are shared between the members of your household.
In section 2, you enter personal lifestyle and travel choices that apply to you as an individual.

The calculator then gives you a chart that you can print out:



Section 1 (household)

How many people are there in your household?

q1. 2 Enter / update

Notes:
This is needed for sharing out your gas, electricity and car use between the members of your household.

You can enter a decimal, e.g. 3.5, if you have a family member who is away from home for part of the year.
more ...

How much electricity is used in your household?
Select one option:

- Small house / flat (3,000 kWh)
- Medium (4,800 kWh)
- Large house (7,000 kWh)

- Enter actual amount used from your bills

q2. 5500 Latest reading (kWh)
0 Reading 12 months before
Calculate

Notes:
Electricity use is measured in kilowatt-hours (abbreviated to kWh).

To make an accurate calculation, you need to find your latest bill and the reading (in kWh) at the end of the last quarter.
Then find the bill 12 months before it and the corresponding reading.

☑ Tick the box if your electricity comes from one of the green tariffs:
Good Energy; Equipower; Green Energy Dark Green and Pale Green; LoCO2 Energy Planet, Energy Pocket+ and Energy Pocket; Ecotricity New Energy + and New Energy; Ovo Green Energy and New Energy

The CO_2 emission factor for electricity is taken to be 0.527 kg / kWh [read more]
There is a reduction of 25% in CO_2 emissions for the green tariffs listed [read more]

5500 kWh
1.27 tonnes CO_2

How much gas is used in your household?
Select one option:

q3.

- Small house / flat (12,000 kWh)
- Medium (18,000 kWh)
- Large house (27,000 kWh)

- Enter actual kWh used

Notes:
Gas consumption is generally measured in units of volume, and this is converted on gas bills into units of energy i.e. kilowatt-hours (kWh) - see Sources page.

To make an accurate calculation of the CO_2 generated, you can enter the annual kWh used (if you know this), or you can calculate it from your bills.

Calculate amount used from your bills

18000 kWh

3.65 tonnes CO_2

To calculate from your bills, first select how your gas is measured. If your bills don't say what the units are, you can probably find the units on the meter.

Recently installed meters measure gas in cubic metres (m^3), but older meters measure in hundreds of cubic feet - or you may have the kWh already calculated.

Enter the meter reading at the end of the last quarter from the latest bill and then the reading from 12 months before.

The CO_2 factor for natural gas is 0.203 kg / kWh ...[more]

Is heating oil, coal, wood or bottled gas used in your household?

q4.

No Yes

Notes:
The following CO_2 factors are used.
For oil: 2.96 kg / litre
For coal: 3.26 kg / kg
For wood: 0.10 kg / kg
For bottled gas: 3.68 kg / kg
...[more]

How many cars are used by your household?

Select one option:

0 1 2 3 4

Car 1

Select car size:

- Sports car or large SUV (35 mpg)
- Small or medium SUV, or MPV (46 mpg)
- City, small, medium, large or estate car (52 mpg)
- Enter actual mpg:

q5. 40

Select 12-month car mileage:

- Low (6,000 miles)
- Average (9,000 miles)
- High (12,000 miles)
- Enter actual milage:

5000

Calculate

1.79 tonnes CO_2

Notes:
Emissions are taken to be 14.3 kg CO_2 per gallon.

Select the car type or, if you know the fuel consumption accurately, enter it in the appropriate box.

Average values for miles per gallon (mpg) are taken from *Which?* Car guide 2019/20.

To work out your annual mileage:
• If you have owned the car from new, divide the total mileage by the number of years
• For an older car, you can take the difference between the mileage shown on your last two MOT certificates.

Read more on how the factors are obtained.

Section 2 (personal)

FOOD

How much of the food that you eat is organic?

None
Some
Most
All

0.2 tonnes CO_2

Notes:
Non-farmed fish counts as organic.
The fertilizer used in growing food that is not organic causes greenhouse gas emissions through nitrous oxide released from the soil, and through CO_2 emissions from the manufacture and transport of fertilizer.

MEAT: How much meat/dairy do you eat personally?

q6.

Above-average meat/dairy
Average meat/dairy
Below-average meat/dairy
Lacto-vegetarian
Vegan

0 tonnes CO_2

Meat and dairy production generates methane from animals and slurry, and CO_2 from the energy used in farm operations.

Food transport, packaging and processing all require energy, releasing CO_2.

Food decomposition in landfill sites releases methane.

Edible food can be wasted because too much is prepared, or because it has gone past its use-by date and so on.

Some greenhouse gas emissions are currently almost impossible to avoid: methane from tilling and soil management, and CO_2 from arable farms and the operation of retail stores. These amount to around 0.2 tonnes per person.

...[more]

FOOD MILES: How much of your food is produced locally?

Very little (much foreign / out of season food)

0.2 tonnes CO_2

- ○ Average
- ◉ Above average
- ○ Almost all

FOOD PACKAGING AND PROCESSING: How much of your food is packaged / processed (e.g. 'ready meals', tins)?

- ○ Above average
- ○ Average
- ◉ Below average
- ○ Very little

0.2 tonnes CO_2

COMPOSTING: How much do you compost potato peelings, leftover and unused food etc?

○ None ○ Some ◉ All

0 tonnes CO_2

WASTE: How much food do you waste (on average, over one fifth of edible food is thrown away)?

- ○ Above average (50% more)
- ○ Average
- ○ Below average (50% less)
- ◉ Very little (90% less)

FOOD TOTAL including almost unavoidable 0.2 tonnes: 0.66 tonnes CO_2

Health, education, etc :

q7.

1.1 tonnes CO_2

Notes:
Carbon dioxide is generated by the health service, schools, social services, the armed forces and so on .

This amounts to 1.1 tonnes per person per year for the UK.

You have no direct control over this amount, which is generated on your behalf, but you can join campaigns to make public services more energy efficient, especially if you work within one of them.

Journeys by bus
Enter the number of miles travelled in the last year (or leave blank) and select 'Calculate':

q8.

Enter your regular mileage each week:
Enter your regular mileage each month:
Enter your other mileage in the year:
Calculate

0 miles
0 tonnes CO_2

Notes:
You can estimate your mileage by:
- estimate the average journey time
- multiply by average bus speeds

(roughly 15mph for urban journeys and 20mph for rural journeys).

If you are a regular bus traveller, enter a typical week and/or month and these will be multiplied up (by 48 and 12 respectively) and added to your other mileage.

The CO_2 emission factor for bus travel is taken to be 100 g/mile ...[more]

Journeys by train
Enter the number of miles travelled in the last year (or leave blank) and select 'Calculate':

q9.

Enter your regular mileage each week:
Enter your regular mileage each month:
Enter your other mileage in the year: 100
Calculate

100 miles

Notes:
You can estimate your mileage by:
- list the train journeys
- add up the total journey time

(remembering to double if return)
- multiply by average train speeds

(roughly 20mph if suburban
45mph if cross-country
70mph if intercity).

If you are a regular train traveller, enter a typical week and/or month and these will be multiplied up (by 48 and 12 respectively) and added to your other mileage.

The CO_2 emission factor for rail travel is taken to be 100 g/mile ...[more]

0.01 tonnes CO_2

Flights:

Any flights from the UK to Europe and/or Africa?
(•) No ( ) Yes

Any flights from the UK to North & South America ?
(•) No ( ) Yes

q10.

Any flights from the UK to Asia & Australasia ?
(•) No ( ) Yes

Any other flights e.g. between UK airports or between airports outside the UK?
(•) No ( ) Yes

0 total hours flying

0 tonnes CO_2

Notes:
Enter the **number** of international return trips from the UK that you personally made in the last year.

Then the **hours** spent on flights within the UK, or in flights between airports outside the UK.

For example, if you went on one return trip with two friends to Spain, enter a "1" in the Spain box.

The calculator assumes emissions of ¼ tonne CO_2 equivalent per hour flying (roughly 500 g per mile)...[more]

Miscellaneous personal lifestyle choices:

What is your miscellaneous spending?
( ) Above-average (5 tonnes CO_2)
( ) Average (3.4 tonnes CO_2)
( ) Below-average (2.4 tonnes CO_2)
(•) Much below-average (1.4 tonnes CO_2)

q11.

Do you recycle paper, glass and metal?
( ) No
(•) Yes

Do you recycle plastic apart from bags?
( ) No
(•) Yes

1.19 tonnes CO_2

Notes:
Your miscellaneous spending is all your other spending i.e. on:
- recreation and leisure facilities
- housing
- household appliances
- hygiene
- hotels and other holidays
- furnishings
- clothing & footwear
- alcohol & tobacco
- post and telecommunications
- books, newspapers & magazines

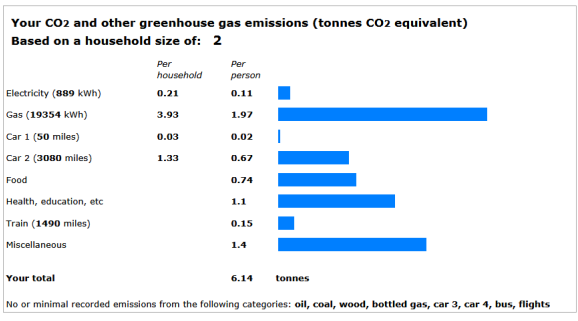
and so on.

Almost all of this spending will be associated with greenhouse gas emissions to some degree. Spending on these tends to follow size of income.

Your total 6.32 tonnes CO_2

What to do now:
- Compare your total with the world and national averages in the graph below
- View/print summary graph:

Carbon Footprint Calculation www.carbonindependent.org
3 May 2019



https://www.carbonindependent.org/co2_summary.html

View / print summary

- Set a target to reduce your total for the coming 12 months - we have found that a 10% reduction year on year is easily achievable. Read more...

How your total compares to the rest of the world

Your total	6.32
World average	4.4
UK average*	14.1
USA	17.6
China	6.2
India	1.8
Mozambique	0.3

For sources, see https://www.carbonindependent.org/94.html.
*The figure for the UK includes adjustments for greenhouse gases other than CO_2. The figures for the other countries do not, as these are not so readily available.

Notes
The calculator is based around a family household unit, where car travel is done to bring in income for the family or to travel for family leisure, and so CO_2 emissions need to be shared between all members of the household. If your circumstances are different, you may need to adapt the calculator, e.g. enter the household size as 1, and share out household electricity and gas before entering it.

Some travel may be carried out as part of your job e.g. international aid workers may have to fly in order to do their jobs effectively. Enter in the calculator just what you choose to do, not what you cannot avoid.