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## 2. ENERGY IN YOUR HOME

Accounts for greenhouse gas emissions from fossil fuel use.

**If you have central heating** start with a base household score of: 4800kg for a detached house; 3200kg (semi); 2200kg (terraced); 1600kg (flat).

**If you don't have central heating** and just heat the room you're in, start with 800kg

How warm is your home? For each degree above 17°C **add 10%** to your base figure; for each degree below, **subtract 10%**.

If your home is well-insulated (e.g. a modern house with 200mm loft insulation, cavity wall insulation and double glazing), **subtract 30% from your score so far**.

If you have a new condensing-flue boiler subtract **another 20%** but if your boiler is over 15 years old **add 15%**.

These figures are for gas. Otherwise: if you use oil add 40% to your score so far; for coal, add 80%; for wood, divide by 8. If you use electric heating, multiply your score by 2.5\* unless you use a heat pump (which scores the same as gas).

Now **divide by the number of people living in your home to get your personal heating score:**

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**Next estimate your personal score for hot water.**

If you have a bath or long shower every day, start with.....300kg

If you mostly have quick showers (not a power shower), start with .....200kg

But if you live alone and have a hot water cylinder (not combi boiler) add 100kg

**If you have solar panels**, subtract one third from your score.

This assumes you mostly heat your water with gas. If you use oil add 40%; for coal, add 80%; for electricity multiply by 2.5\*; for wood divide by 8.

**Your personal hot water score**

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And now, your score for **appliances**. Start with a household figure of ..... 1600kg

If you have only "A"-rated appliances and efficient light bulbs, subtract..... 400kg

If you use electricity carefully (switching off lights, only using the washing machine when full, no dishwasher or clothes drier) subtract .....200kg

If you are ultra-frugal (don't have/use freezer, TV or oven, wear clothes several days to minimise washing etc.) subtract another ..... 500kg

If you have a house full of energy-hungry people, with TVs on all the time and daily use of a washing machine and dryer, add..... 1400kg

If you have an oil-fired Aga or similar range cooker, add .....5000kg

**Divide by the number of people in the house for your personal appliances score\*:**

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**Now add up your score for heating, hot water and appliances to get your personal home energy score**

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*\*Buying "green" electricity sends a positive message to suppliers but in the UK doesn't result directly in lower GHG emissions: renewable generation is limited by planning constraints. See article at: [www.livingwitness.org.uk](http://www.livingwitness.org.uk)*

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## 3. FOOD

Accounts for energy use in agriculture, fertilisers, food transport, processing, storage, retail and catering. Also includes methane and nitrous oxide from animals, animal wastes and agricultural soil, and notional credit for soil carbon take-up in organic farms.

**Start with a base annual score** of 2000kg (typical British diet, 2400kcal/day, 38% animal-based); 2250kg (serious meat eaters, 50% animal diet); 1400kg (lacto-vegetarians) or 1000kg (vegans)

**If you only eat organically produced food** subtract 25% from this score.

About 75% of UK food is imported and/or processed (including frozen & canned). **If nearly all** your food is processed and/or imported add 100kg to your figure so far. But if **very little** of your food is processed and/or imported subtract 400kg

About 25% of meals in the UK are eaten away from home. If you **hardly ever** eat in restaurants or canteens subtract 100kg from your figure so far. But if you eat **half your meals** in restaurants or canteens add 100kg

**Your food score**

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## 4. MATERIALS AND WASTE

Accounts for energy and material use in manufacturing and construction, as well as greenhouse gas emissions in waste disposal.

If **your household** produces the UK average of 23kg/week of waste including recycling (one dustbin full or two black bags) start with a figure of 1400kg. If you produce half this (one black bag/week), start with 700kg.

This initial figure assumes all your waste goes in the standard refuse collection, usually for landfill so if you:

- compost all kitchen and garden waste (typically 7.5kg/week), subtract 20% of your initial figure
- recycle all paper, glass and metal (typically total 7.5kg/week) subtract 10% of your initial figure
- recycle all plastic your council accepts (typically 1.5kg/week) subtract 20% of your initial figure

About 50,000kg of CO<sub>2</sub> are emitted providing materials to build a typical family house. **If your home is under 50 years old** add to your score so far: 4 bed detached 1500kg, 3 bed semi 1000kg, 2 bed terr. 750kg, 1 bed flat 500kg For a one-room extension or loft conversion in the last 50 years, add 250kg.

**If you filled a skip** this year with building or DIY waste, add .....1000kg

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**Divide the total by the number of people in your house to get your materials and waste score**

## 5. EVERYTHING ELSE

Accounts for greenhouse gas emissions linked to providing other goods and services.

The items included above account for 70% of national GHG emissions. We can make a very rough estimate of your share of the rest, based on your household spending on other goods and services.

**Estimate your monthly spending** in £ on items such as clothing, furniture and electrical appliances, and on services such as entertainment, telephone and healthcare. The UK average is £420/person. Remember to include your share of spending on items for your household. Don't include food, restaurants, travel, home energy, or your mortgage, rent, tax, pension, savings and investments.

**Multiply by 6** to get the contribution of your spending to emissions in kg CO<sub>2</sub>-equivalent.

To allow for government activities on our behalf (hospitals, schools, road building, emergency services, the military etc.) add a further ..... 2400kg

**Your "everything else" score**

## 6. AT LAST – ADDING IT ALL UP

Add up your score for:

Transport

Energy in your home

Food

Materials and waste

Everything else

To get your total:

### How do you compare?

UK annual emissions (including international aviation and carbon embodied in trade) amount to about 14,500kg per person of CO<sub>2</sub>-equivalent greenhouse gases.

USA annual emissions (with international aviation) are about 21,000kg per person

India's annual emissions average about 1,300 kg per person.

The global average is about 5,800kg/person

To avoid the worst effects of climate change, global emissions must fall by **at least 60%**, to below 1,500kg/person, over the next 40 years.

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[www.livingwitness.org.uk](http://www.livingwitness.org.uk)



# Your contribution to climate change

## Personal Greenhouse Gas Calculator

What is the climate impact of your lifestyle? How could you reduce your greenhouse gas emissions? This sheet is divided into parts looking at:  
**1) Transport; 2) Energy in your home; 3) Food; 4) Materials and waste; 5) Everything else.**

We will calculate emissions in kg of CO<sub>2</sub>-equivalent gases. Some activities emit gases (e.g. methane, nitrous oxide) that have much higher impact per kg than CO<sub>2</sub>.

The sheet is not precise but a calculator would help! It may not fit your lifestyle perfectly so please do be creative and make guesses – but be honest with yourself!

### 1. TRANSPORT

Accounts for energy use, non-CO<sub>2</sub> exhaust emissions, emissions in car manufacture.

#### a) Car drivers

For each 1000 miles you drive each year:

If you drive a petrol car using 8.5 litres/100km score:.....415kg

For a diesel car using 6.5 litres/100km score .....380kg

For petrol cars if most of your trips are below 3 miles **add 25%** (extra fuel for cold starts).

If you drive a 4x4 or large people mover **add 50%** (100% for biggest engines) to your figure so far but for a small car (e.g. Clio or new Mini), **subtract a third.**

Divide by the number of people in the car (but don't include those just coming along for the ride) to get your car score for the year:

#### b) If you use public transport:

For every 1000 miles/year you travel by bus or diesel train, add .....90kg

For every 1000 miles/year by electric intercity train or Underground add.....50kg

For every 1000 miles/year by light rail or tram add.....25kg

c) For **each hour** you spent flying, short or long haul, in the last year, add ...350kg

**Your transport score (a+b+c) in kg CO<sub>2</sub>-equivalent**