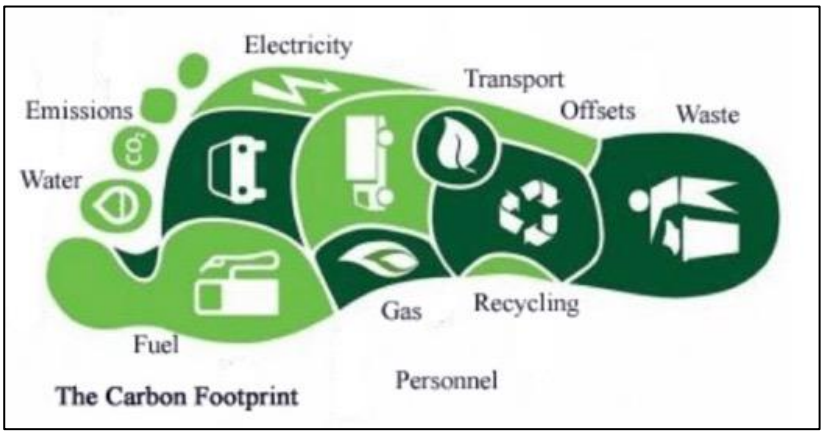
HOW TO REDUCE YOUR CARBON FOOTPRINT

Deeside CAN, Summer 2021



What is a carbon footprint?

A carbon footprint is the total amount of CO_2 and other greenhouse gases (GHG) created by an event or someone's way of life. These greenhouse gases contribute to warming up the atmosphere which leads to climate change, affecting all our lives.

It is difficult to calculate precisely, but we can all think about the carbon footprint left behind by our lifestyles. Some things we can change ourselves, and some things require government action to change. Most people in affluent countries have an unsustainable carbon footprint.

What affects your carbon footprint?

Each person's carbon footprint depends on their lifestyle and may be very different. Four main activities add to your carbon footprint:

- The **transport** you use, including cars, buses, trains and planes.
- How much energy you use in your **home** for heating and general use.
- The **food** you eat, and how much of it you waste.
- How much **stuff** you buy, and how much you reuse, repair and recycle.

These GHG emitting actions can be **offset** by supporting wildlife, including taking care of soils, planting trees and safeguarding peat bogs.

What are Greenhouse Gases (GHG)?

Carbon Dioxide CO_2

CO_2 is naturally present in the atmosphere as part of the earth's carbon cycle. But humans have increased atmospheric carbon dioxide concentration by 48% since the beginning of the Industrial Revolution, mainly by burning fossil fuels (coal, oil, gas). This alters the ability of natural carbon stores, like forests and soils, to remove and store carbon from the atmosphere.

Water Vapour

Water vapour is the most abundant greenhouse gas. A warmer atmosphere can hold more water vapour. This increases the possibility of clouds and rain, and the severity of rainstorms.

Nitrous Oxide N_2O

N_2O is naturally present in the atmosphere as part of the Earth's nitrogen cycle. Now about 40% comes from human activities, mainly agriculture, industry, and burning fossil fuels. N_2O molecules stay in the atmosphere for over 100 years and the impact on warming is 300 times greater than CO_2.

Methane CH_4

About half the CH_4 emitted worldwide comes from human activities such as coal, natural gas, and oil production, livestock and the decay of organic waste in landfill sites. CH_4 has a short lifetime in the atmosphere but 25 times greater impact than CO_2.

Fluorinated gases

These are substitutes for gases that deplete the ozone layer. They are emitted in smaller quantities than other GHG but are the most potent and longest lasting type of GHG emitted by human activities. So they can have a disproportionately large effect on global temperatures. They are most commonly used in fridges and air conditioning units.

Measure your Carbon Footprint

You can measure your carbon footprint online using the WWF calculator:

https://footprint.wwf.org.uk/

According to https://ourworldindata.org/grapher/consumption-co2-per-capita, the UK average carbon footprint in 2018 was 8,050 kg of CO_2 (or 8.05 tonnes) per person. The average in Qatar was 25.34 tonnes, and in USA and Australia it was over 15 tonnes. In India it was 1.74 tonnes, whilst in Nigeria just 0.66 tonnes. The global average is about 4 tonnes/person.

We should all be aiming to have as small a carbon footprint as possible, and one that we can offset, so that our net carbon footprint is zero.

Experts advise that the global average carbon footprint needs to fall to about 2.5 tonnes/person/year by 2030 and to 0.7 tonnes/person/year by 2050.

In Scotland, the Government has committed to reaching net zero GHG emissions by 2045.

Reduce your ‘Travel’ carbon footprint

Transport generates almost 30% of national GHG emissions. Try to travel less – less far, less often and with less fossil fuels.

Consider choosing the following priorities when you need to travel:

1. Stay at home and communicate with people virtually if you can, especially when it’s for routine business.
2. Walk.
3. Cycle. Try an electric bike – look for places to hire them, or you can get an interest free loan to buy one through https://energysavingtrust.org.uk/low-carbon-travel/
4. Public and shared transport.
5. Electric cars. First ask yourself if you need to own a car at all. Then only buy a new one when you need to and make it electric if you can. There are grants and interest free loans available for electric cars and charging points through https://energysavingtrust.org.uk/low-carbon-travel/
6. Petrol or diesel cars. Unless they are very inefficient, cars should be looked after and kept on the road for a long time.
7. Minimise flying. If you must fly, fly for love not money! Fly non-stop where possible (landings and take-offs use more fuel) and go economy class.

Reduce your ‘Home’ carbon footprint

Energy used in the home creates 25% of national GHG emissions. Around 75% of this is used for heating, and 25% for electrical appliances.

Home heating

Reducing energy for home heating will also reduce your fuel bills. Try to:

1. Draught proof your windows and doors (saves 20%)
2. Insulate your attic (saves 20%)
3. Install double glazing (saves 20%)
4. Insulate cavity walls (saves 20%)
5. Wear more clothes indoors and turn down the heating by 2 degrees (saves 30%)

You could also:

1. Generate your own power/heat by fitting solar panels (typical payback time is ca. 10 years) or fitting a wind turbine.
2. Fit an air-source or ground-source heat pump. This will need a more detailed assessment. Contact Home Energy Scotland, or check out their website at https://www.homeenergyscotland.org/your-guide-to-choosing-a-heat-pump-and-installer/

Home electricity

You can reduce your GHG emissions by switching to renewable electricity. Good providers include Octopus Energy, Pure Planet, So Energy and Bulb.

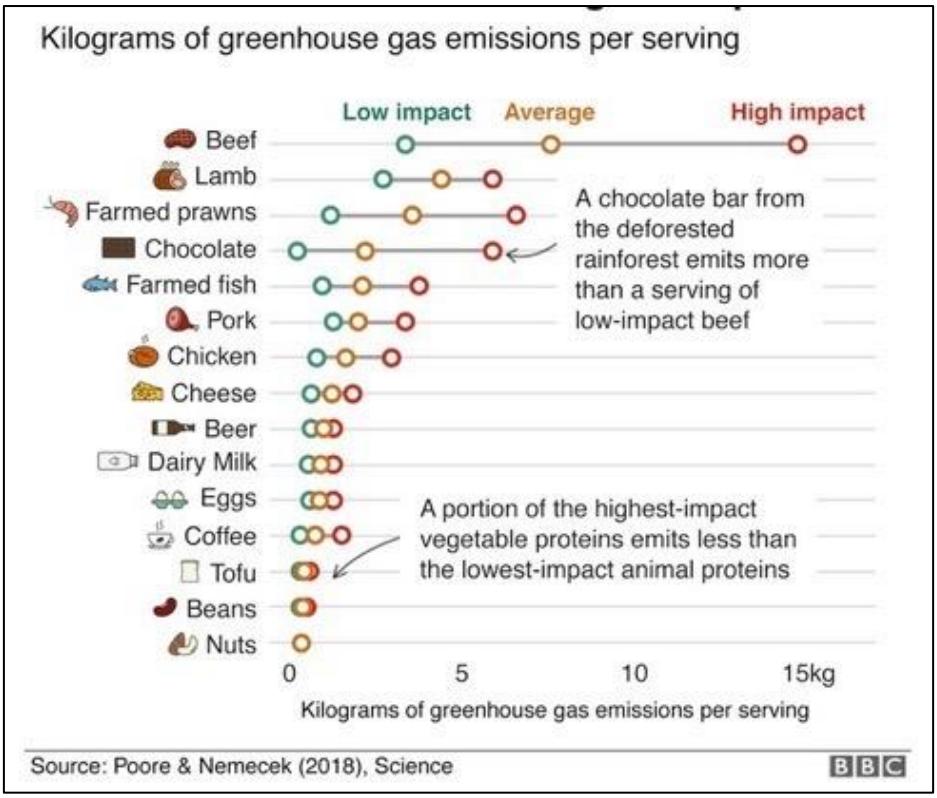
Washing and drying clothes uses a significant amount of electricity at home. To reduce energy use, try to:

1. Wash your clothes less often!
2. Wash your clothes in cooler water. Modern detergents are designed to clean better in cool water.
3. Dry your clothes outside rather than tumble dry.
4. If you have to use the tumble drier, dry multiple loads back-to-back (the dryer is already warmed up), clean the lint filter before every load to improve drying efficiency and use the moisture sensor if your machine has one.

Lighting can also use a lot of energy. Try to change incandescent bulbs for LED ones. Although they cost more, they use 15% of the energy and last up to 25 times longer.

Reduce your ‘Food’ carbon footprint

Food types can have very different footprints. It depends on how the food was produced and where it comes from.



Simple ways to reduce your food footprint include:

1. Reduce high GHG emission meat or fish consumption, e.g., by eating it less often, choosing local, organic produce. Use supermarkets, butchers and fishmongers who know where the meat or fish comes from.
2. Buy seasonal, organic food that is grown locally. Avoid processed and flown food.
3. Eat low on the food chain, mostly fruits, vegetables, grains and beans.
4. Make the most of leftovers to reduce food waste.
5. Drink locally made beer and European wine to reduce emissions related to transportation.
6. Drink foreign beers on holiday or for special occasions.
7. Draft beer is transported in reused kegs and avoids single use packaging.

Reduce your ‘Stuff’ carbon footprint

Britain’s landfill sites emit about 8% of the nation’s GHG emissions. We are also running out of landfill sites in which to bury our rubbish.

We need to buy less stuff, then re-use, repair and recycle what we have.

Try to keep things for longer, and don’t replace them if they break, get them repaired instead.

Increase your ‘offset’

You can offset our carbon by planting more trees and restoring peat bogs. New technologies, like carbon capture and storage (CCS), also offset emitted GHG.

Increase your ‘Trees’ offset

A mature tree absorbs about 22 kg of CO_2 from the atmosphere each year. This figure varies significantly depending on factors like the size of the tree, its location, type, age and health. For example, a large, deep-rooted broad leaf tree in a sunny climate with regular rainfall grows quicker and absorbs more carbon than a small tree struggling in the corner of your garden.

In general, it is best to plant trees that are native to the region, because they will grow strongest, and have the least risk of disease. They will also attract native wildlife and help restore the natural balance.

An acre of mature trees will absorb about 2,500 kg (2.5 tonnes) of GHG per year. With the activities of each person living in Europe resulting in an average of about 10,000-12,000 kg (10-12 tonnes) of GHG per year, this means we need about 4-5 acres of mature trees per person to offset all our emissions.

To help plant more trees, try to:

1. Plant native trees in your garden yourself.
2. Work with farmers to plant trees – this gives them an income too.
3. Plant trees with MoreTrees: https://moretrees.eco/

Increase your ‘Peat’ offset

A peat bog is very valuable – the below ground carbon stocks can reach 10-100 times those of the lushest tropical forest.

If peat is drained and cut, to be used for example for burning or as compost, the stored carbon is readily decomposed and released as CO_2.

To help restore peat bogs, try to:

1. Reduce the demand for peat: don’t use it in your garden or fire.
2. Use one of the many peat alternative composts.
3. Support your local peatland restoration projects.

In summary

Let’s change our mindset about ‘carbon’!

1. Emit ‘carbon’ wisely, and value it.
2. Treat your ‘carbon quota’ a bit like money: if you save some here, you can spend it elsewhere.
3. Cut out the high ‘carbon’ activities that are dull, keep the ones that are fun or special to you.
4. Make the most of your ‘carbon’, e.g., only fly for love or family.
5. Set a ‘carbon’ reduction target and meet it. Aim to reduce your carbon footprint to about 2.5 tonnes/year by 2030.

Here are some practical examples to reduce your carbon footprint (taken from ‘The Good Life and Low Carbon Living’, by Jules Petty, 2021).

Figure 6. Personal behavours to reduce annual carbon footprint (tonnes C per person per year)



Deeside CAN

This may all seem daunting, but we can all make small changes every day that will collectively make a big difference. And we can let our MPs and MSPs know that we are behind firm and decisive action on climate change and a just transition.

Deeside CAN - Deeside Climate Action Network – we aim to care and nurture our communities, our environment, our planet.

We believe in a joyful reconnection with nature so we can consciously live more sustainably and safeguard our world for coming generations. We aim to help improve the quality of life and well-being of all while reducing unnecessary consumption and waste. We want to show that we CAN.

Our vision is to help communities understand the huge benefits to be gained through making the natural environment central to all our decision making, following Al Gore's three focusses:

- Our voices, to raise awareness
- Our votes, to pressure politicians to make the changes that we need
- Our choices, to live more sustainably

Deeside CAN is working on five projects at the moment

- Reduce our Carbon Footprint.
- Wildlife Friendly Village.
- Reduce Food waste.
- Deeside Way Green Walks.
- Deeside Travelling Tiny Forest.

Find out more at https://www.deesidecan.org.uk
And at https://www.facebook.com/DeesideCAN