

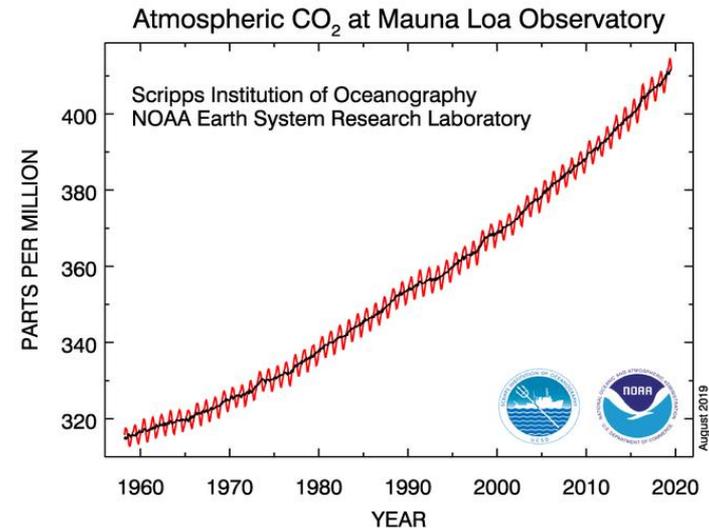
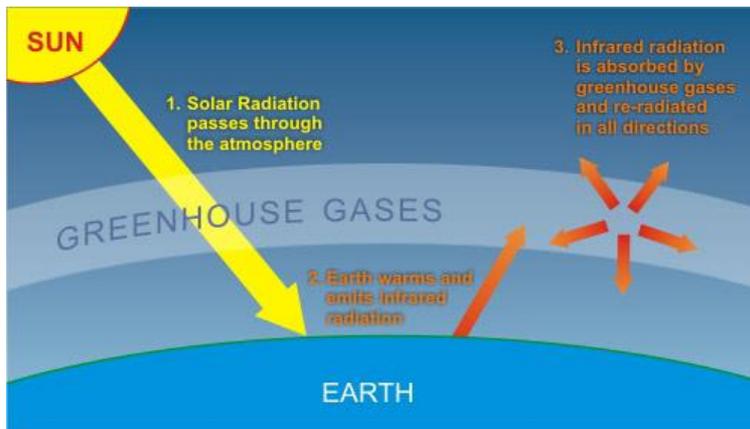
Agenda

- The facts about climate breakdown
- Your Personal carbon footprint
- What you can do to reduce your carbon foot print
 - Transport
 - Home
 - Other
- Agriculture and Carbon. (**Jenna**)



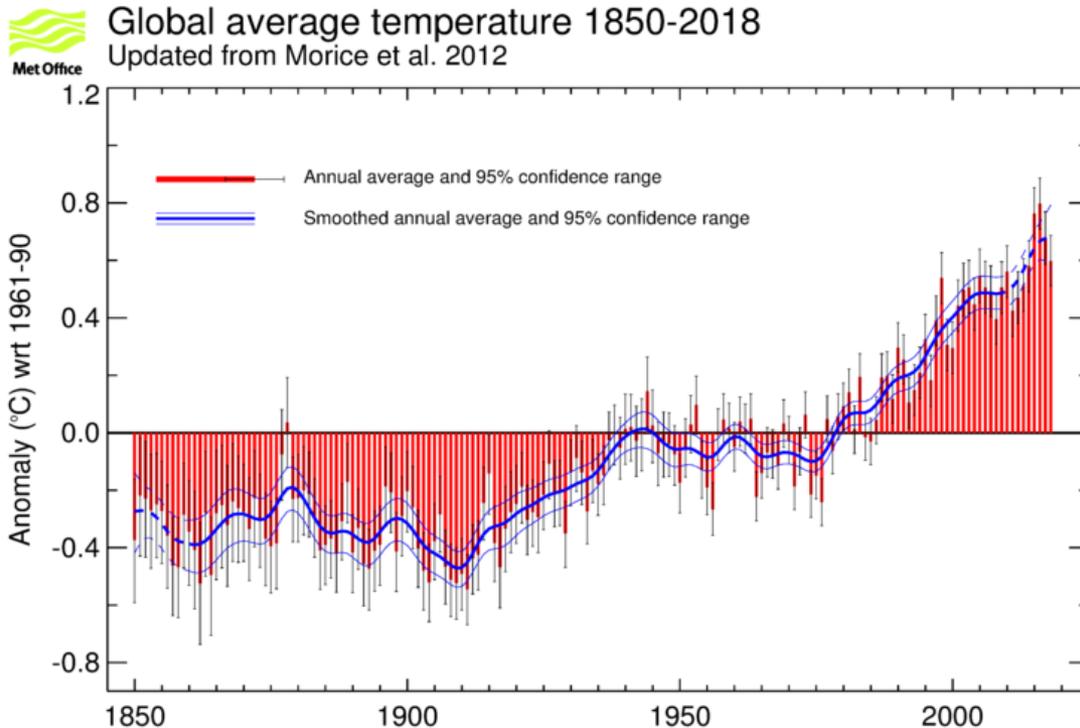
Facts about climate breakdown

- CO₂ and other greenhouse gases mean that less heat is radiated by the earth.
- Human active has increased CO₂



Facts about climate breakdown

- Temperature has increased by 1 °C



Met Office Hadley Centre

Source: www.metoffice.gov.uk/hadobs

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Extreme weather events 2019

- Heat across western Europe with 41-43 °C!
 - 2-3 °C above previous records.
 - Met Office confirms new UK record temperature of 38.7 °C
- More than 100 Arctic wildfires burn in worst ever season
- Rain Bomb in North England, damages dam.
- Tour de France stopped because of freak hail storm
- Hurricane Dorian Bahamas
- Flooding Alicante



Other Environment Problems

- Although bad these are not part of climate breakdown directly
 - Plastic pollution of the land and sea
 - Chemical pollution of the land and sea, in particular pesticides.
 - But loss of soil by agrichemicals does cause climate change
- Climate Breakdown is caused by pollution of the atmosphere with CO², Methane and other gases
- But Petrochemical industry involved in all of these



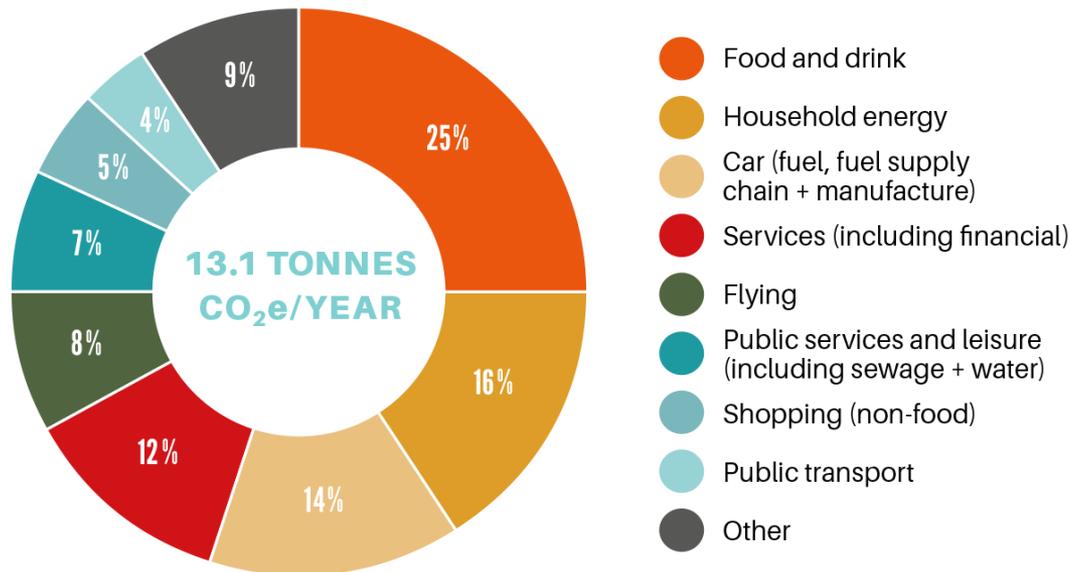
Your Carbon Footprint

- It's proved to be difficult to get reliable information
- This is due to:
 - The complex nature of the problem
 - How much indirect emission are included
 - Some things are changing quite fast
 - Decarbonisation of electricity
 - Improvements in efficiencies
 - New efficient technologies
 - LED bulbs
 - Misinformation by vested interests



Your Carbon Foot Print

AVERAGE CARBON FOOTPRINT IN THE UK*



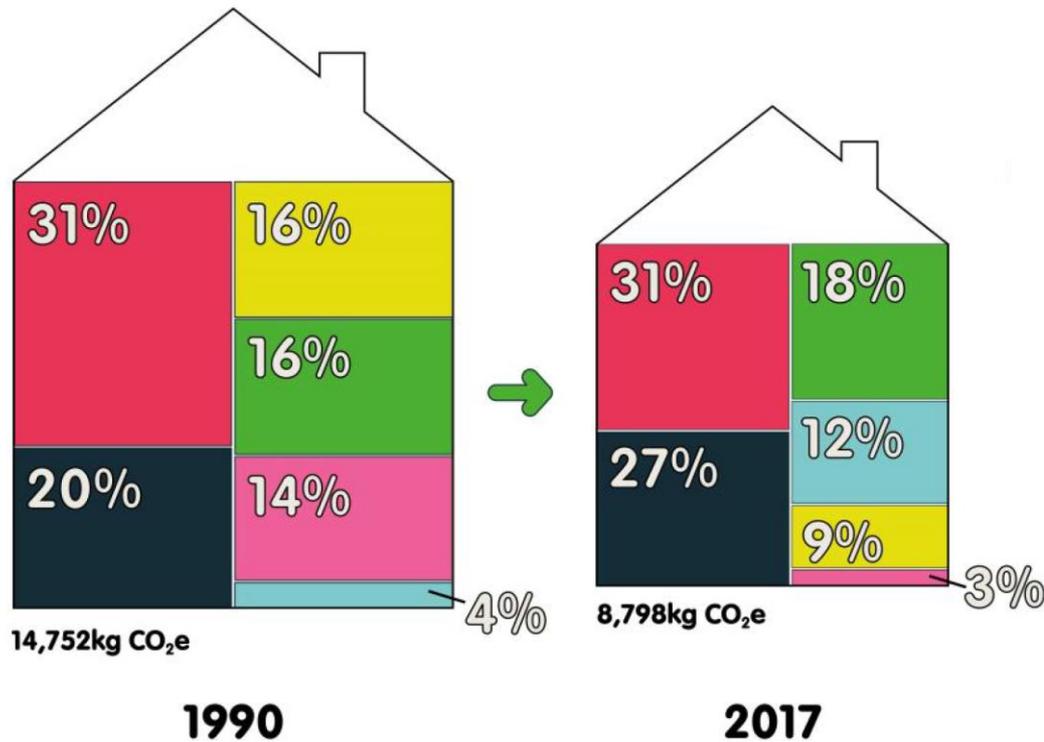
*A **carbon footprint** measures the total greenhouse gas (GHG) emissions caused directly and indirectly by a person. It's **measured** in tonnes of **carbon** dioxide equivalent (tCO₂e), a standard unit which expresses the impact of different GHGs.

Source: Small World Consulting



UK average household emissions

■ Heating ■ Electricity ■ Transport ■ Waste ■ Aviation ■ Diet/Agriculture



Source: Energy Systems Catapult Limited

Your Carbon Foot Print

- A simple view of your carbon footprint, is that the parts you can influence directly can be divided into three parts
 - Transport
 - Home Energy
 - Food

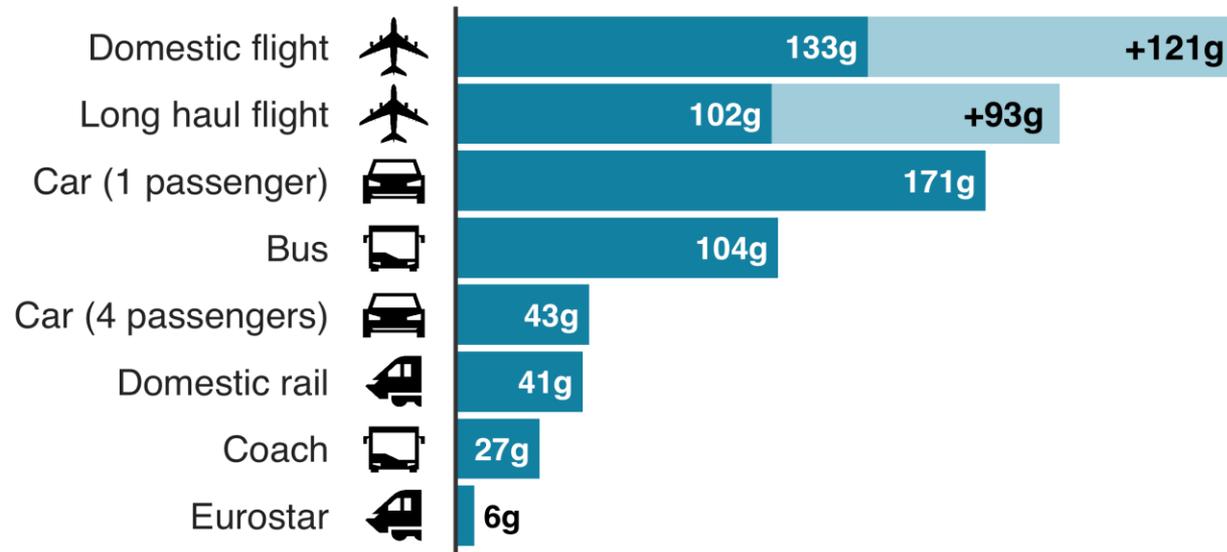


Transport

Emissions from different modes of transport

Emissions per passenger per km travelled

■ CO2 emissions ■ Secondary effects from high altitude, non-CO2 emissions



Note: Car refers to average diesel car

Source: BEIS/Defra Greenhouse Gas Conversion Factors 2019

BBC

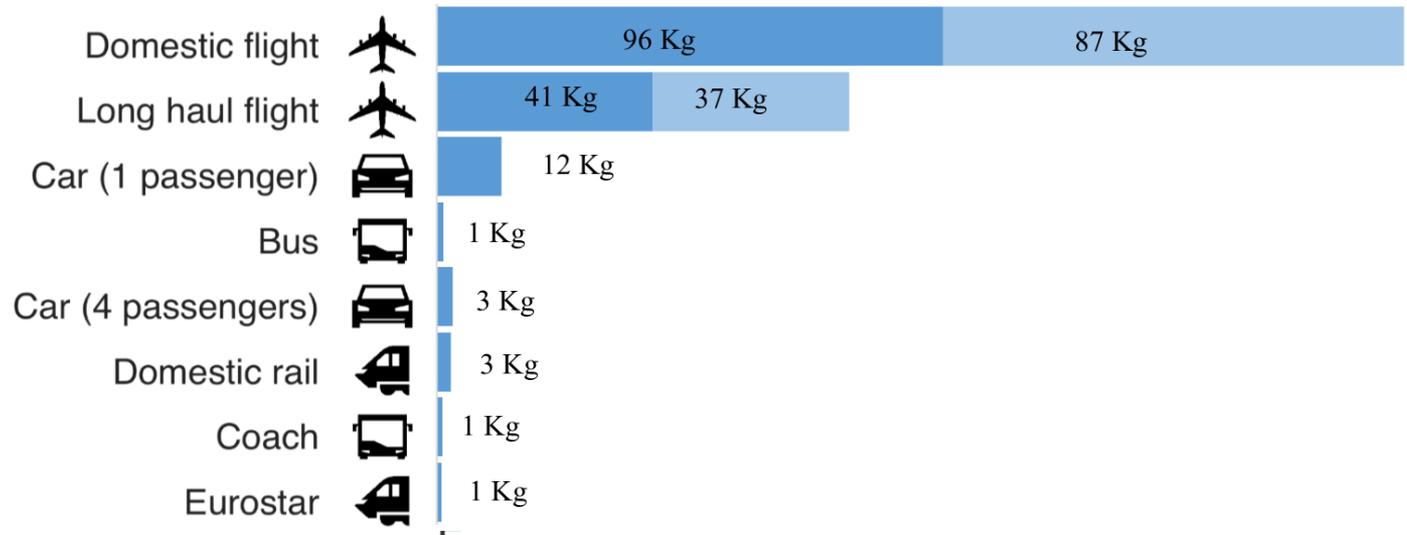


Transport

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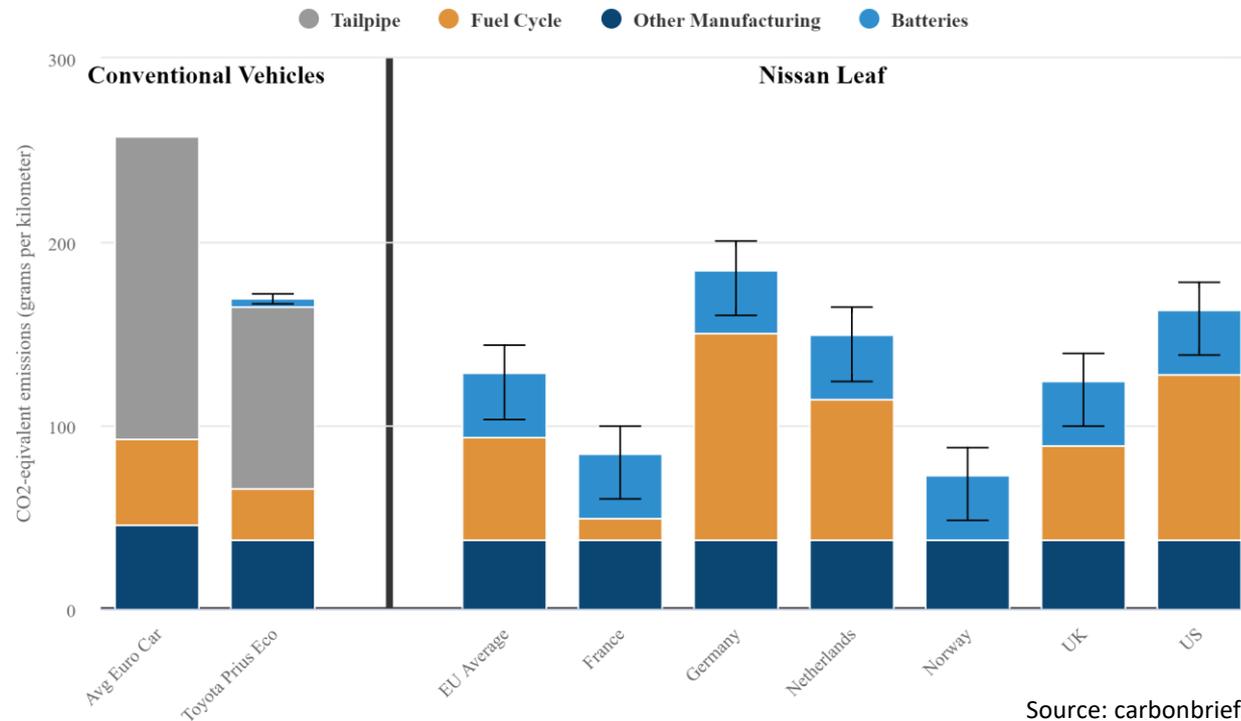
BBC



Electric Cars

- Are electric cars the solution?
 - They are better but they still cause emissions.
 - They will get better as electricity is decarbonised

Lifecycle greenhouse gas emissions: conventional v Nissan Leaf



Source: carbonbrief.org



What you can do about transport

- Travel less
 - Except by foot and bicycle.
- Use and support
 - Public Transport
 - Car Share/lift share Schemes
- Do not fly
- Enjoy slow travel, appreciate the journey.



Your Household Energy usage

- Two main parts:
 - Heating
 - Building
 - Water
 - Other (Electricity)



Household Heating

- Only heat what you need
 - Do not heat a room that is not being used
 - Do not heat when you are out.
 - Do not over heat, a 1°C reduction saves 10% of energy hence 10% of CO²
- Draught proofing
- Insulation
 - Hang thick curtains and insulate your doors
 - Loft Insulation
 - Double Glazing
 - Wall Insulation
 - Floor Insulation
 - Porches and Lobbies
- Insulated yourself, wear an extra jumper.
- Also possibly upgrade your boiler if it's not modern



Household Heating

- Don't trust simple surveys to find the weakness of you insulation.
- Energy tracers
- In the long term think about passive houses.



Water Heating

- Insulation
- Only heat what you need.
- Not too hot



How much do my gadgets emit?

- Simple rule, if they get warm they emit a lot.
- Gadgets have got better, including standby. But they still emit.
- Understand how much your appliances emit.
 - 1 kWh = $\frac{1}{4}$ Kg CO²
 - One Watt 24 hours a day 365 days a year is 8.8 kwh, £1.60, 2.5Kg CO². equivalent of petrol car for 10Km
 - Phone Charger 1 Watt
 - Fridge 20 Watt average
 - Use a smart meter or a plug in monitors to work out how much they each use.
 - Useful information on line
 - Saving money=saving carbon.



Green energy suppliers

- Be careful of greenwash
- Only gave two top marks from Which?
 - Good Energy
 - Ecotricity
- Having a green supplier does not mean you do not have to save energy.
 - With the grid if you do not use green energy somebody else will use it and not use fossil fuel energy.



Other ways to reduce carbon

- Community based action
- Transition Malvern Hills
 - Car Club
 - Electric bike loan scheme
 - Malvern Community Energy
 - Energy tracers
 - Repair Café
 - ...



Other ways to reduce carbon

- Ethical investment
 - Add your own solar
 - Currently government not helping at all.
 - Invest in green enterprises
 - Disinvest from fossil fuels.
- Campaign
 - Important but not part of this talk.
- Offsetting?
 - Is this a good thing?
 - We need to support carbon sinks, but should this be instead of reducing emission.



Conclusion

Consume less

Refuse, reduce, reuse,
recycle

Look where the big carbon savings are.
Don't just do the small easy things.

