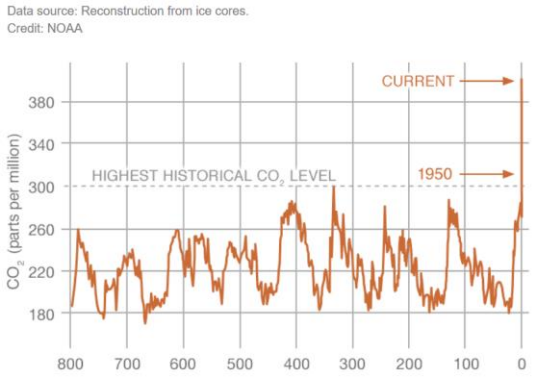
How to Calculate GHG emissions

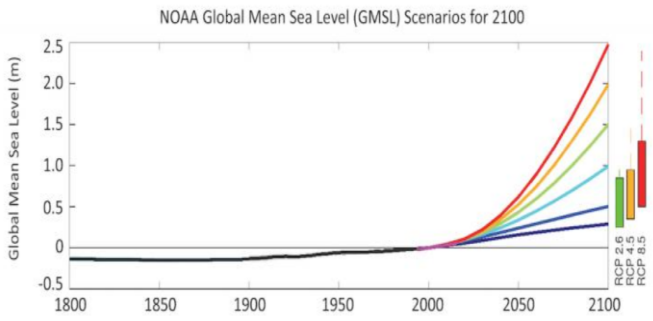
& why

ACTion on Climate in Teignbridge,
https://actionclimateteignbridge.org

Why do we need to calculate?

Year on year emission reduction is needed to avoid a Climate Tipping Point at 1.5^{O}C

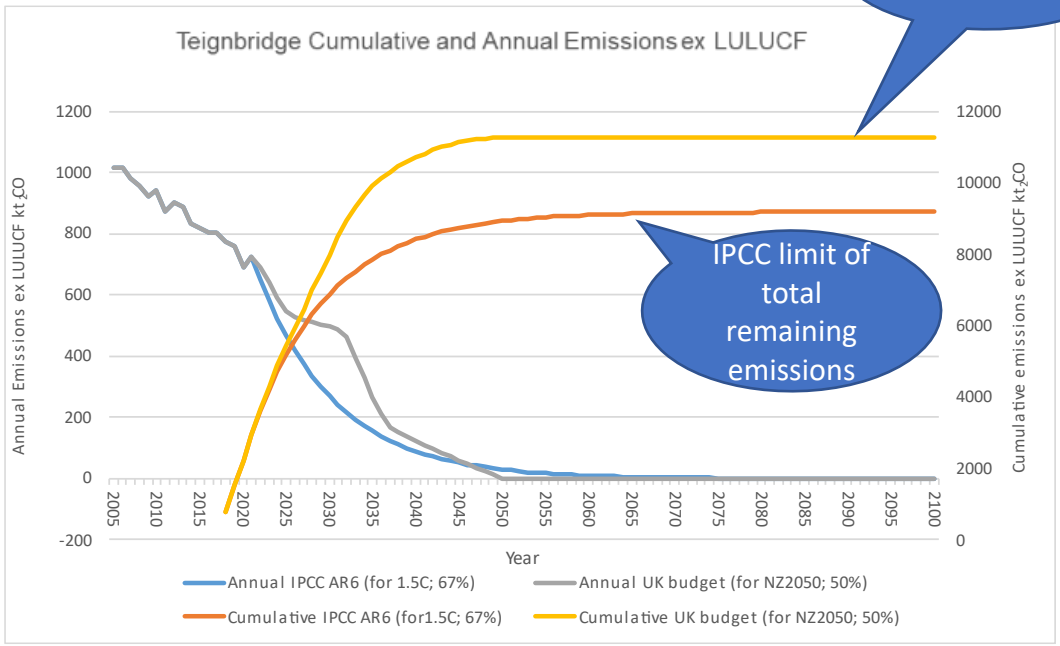


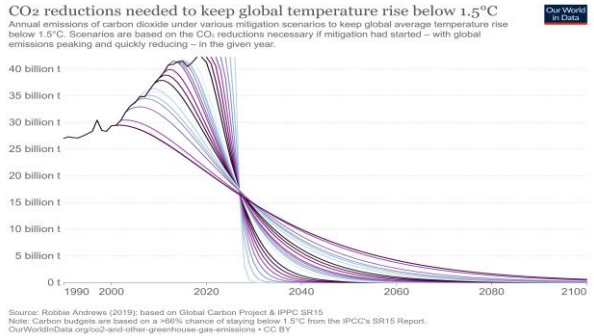


Science Based Targets

For an equitable allocation of global emissions in 2021

Note: the following chart compares territorial CO2 emission reductions for 2022-2100 : Both are for 1.5^{O}C at different % likelihood





Climate Tipping Point:

Reverting the atmosphere to condition of high concentration of greenhouse gases, including methane currently locked by permafrost, making the earth uninhabitable for humans and other complex lifeforms.

Net Zero =

What are GHG caused by human activity and how are they measured?

All numbers are approximated

Measured in weight of CO2 equivalent (CO2e):

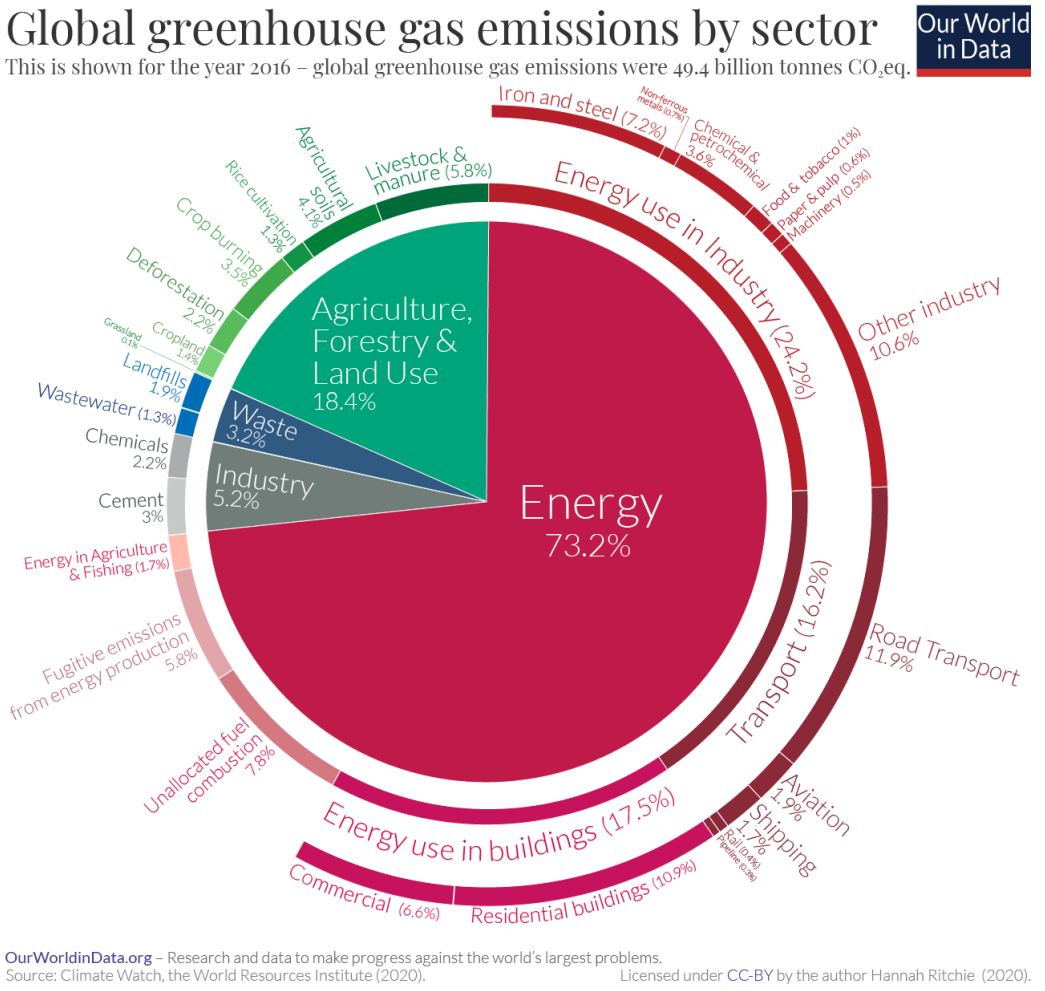
- Carbon dioxide (CO2)> 80%
- Methane (CH4)>10%
- Nitrous oxide (N2O)> 7.0%
- F gases (HFCs, PFCs, SF6, NF3, etc.)> 3%

Where do global GHG come from:

- Burning any fossil fuel (industry, buildings & transport)> 73%
- The rest is from agriculture (land use, livestock & rice); industrial processing (cement & chemicals); waste (landfill & water)

How are they allocated (basis for territorial NDCs):

- Only territorial emissions are allocated to countries.
- Exported emissions (imported good & services) are allocated to country of origin.
- Emissions in international water/air are not allocated to anyone.



What action would have the largest reduction?

What Can we do?

The only reliable way to work out how to remain below the 1.5^{O}C Climate Tipping Point

Measure Carbon Footprint (**CF**) annually to remain within a Carbon Budget which keeps us below 1.5^{O}C.

Only use consumption emissions, these include our emissions in other countries.
(based on a Cradle to grave calculation)

Start with a rough CF allocation in the key areas, to focus effort on most effective/immediate actions.

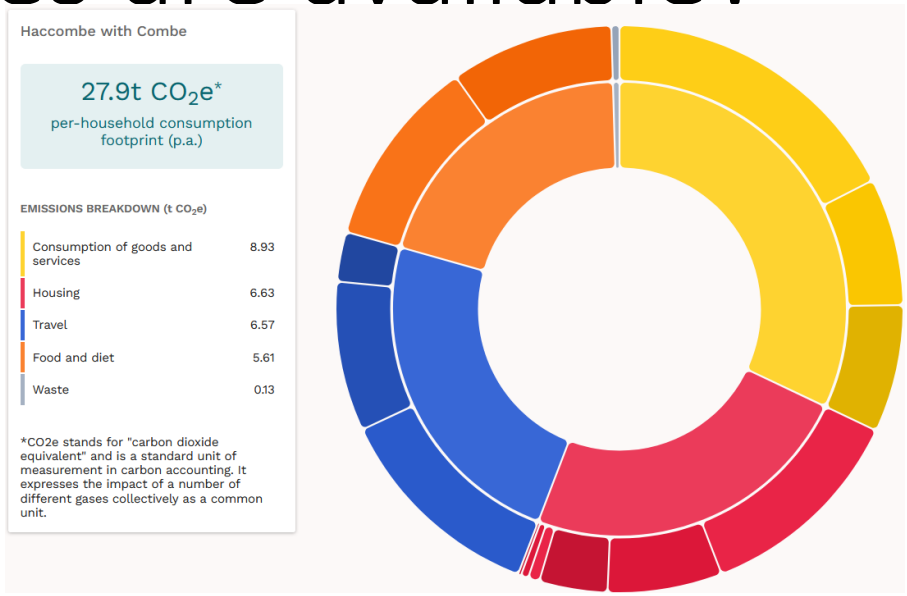
Choose actions which have the fastest/biggest correctly calculated reduction. Ones which you have direct control over.

Be aware of greenwash, there is plenty of it about!
e.g. offsetting, EfW, ignoring embodied emissions and 'green' electricity.

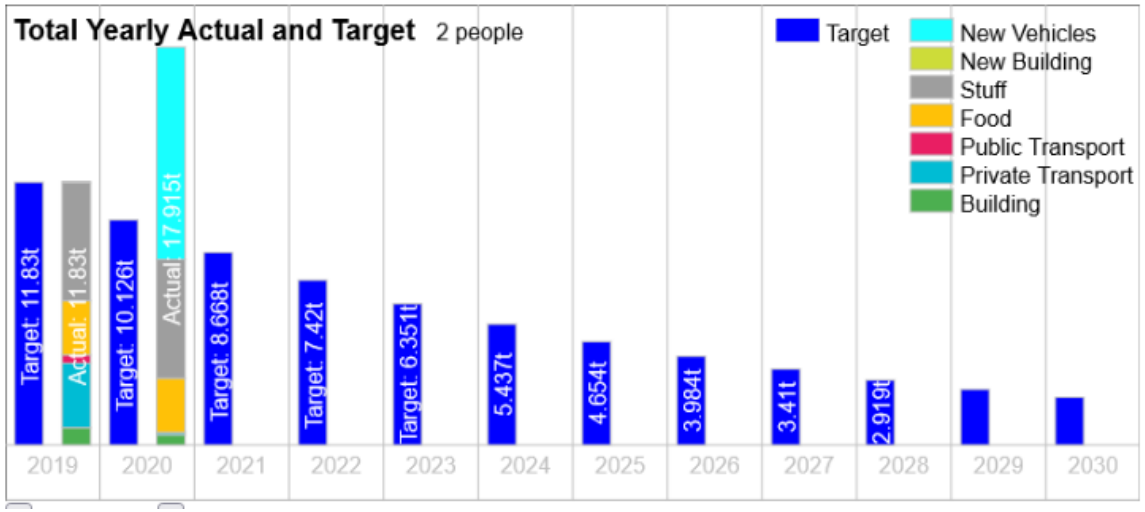
Nothing we do has zero emissions!

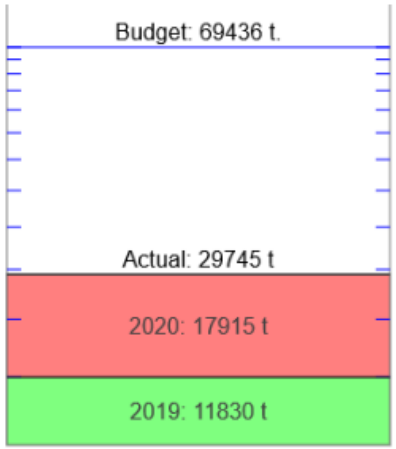
What tools/processes are available?

Quick CI snapshot in my area



Personalised annual CF tracking





Actions that are effective/immediate

If you have not done the personalised Carbon Footprint Tracker

things that will reduce emissions without the need for further analysis (‘safe’ actions):

- Consume less (don’t fall for the sales/discount trap unless it is essential)
- Reuse, repurpose, recycle and share things you only use occasionally, they could make great presents
- Buy local (ideally made/grown locally), everything, food, goods, services
- Eat seasonally and grow your own food
- Eat less red meat, avoid imported meat
- Use a microwave and induction hob where possible, avoid ovens especially agas that run all the time
- Travel less in your car and fly less often
- Use public transport, walk or cycle
- Buy green electricity/gas, where this is 100% from renewables
- Heat only the area you need, set this to the lowest temperature to remain comfortable
- Improve your home’s insulation and ventilation, get impartial advice
- Move your investments to low Carbon businesses