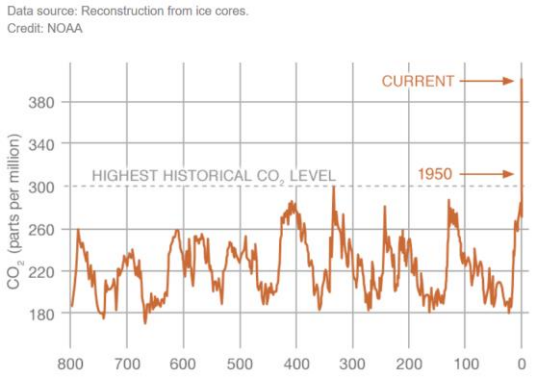
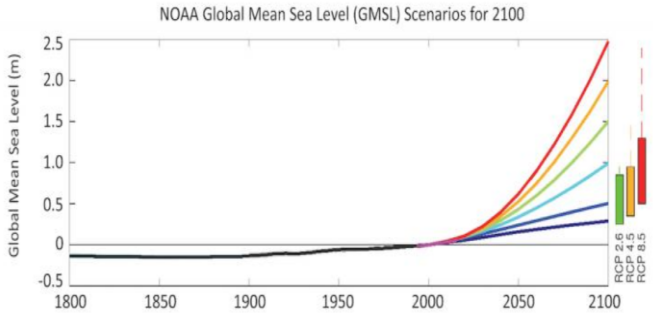
# How to Calculate GHG emissions

**& why**

# Why do we need to calculate?

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

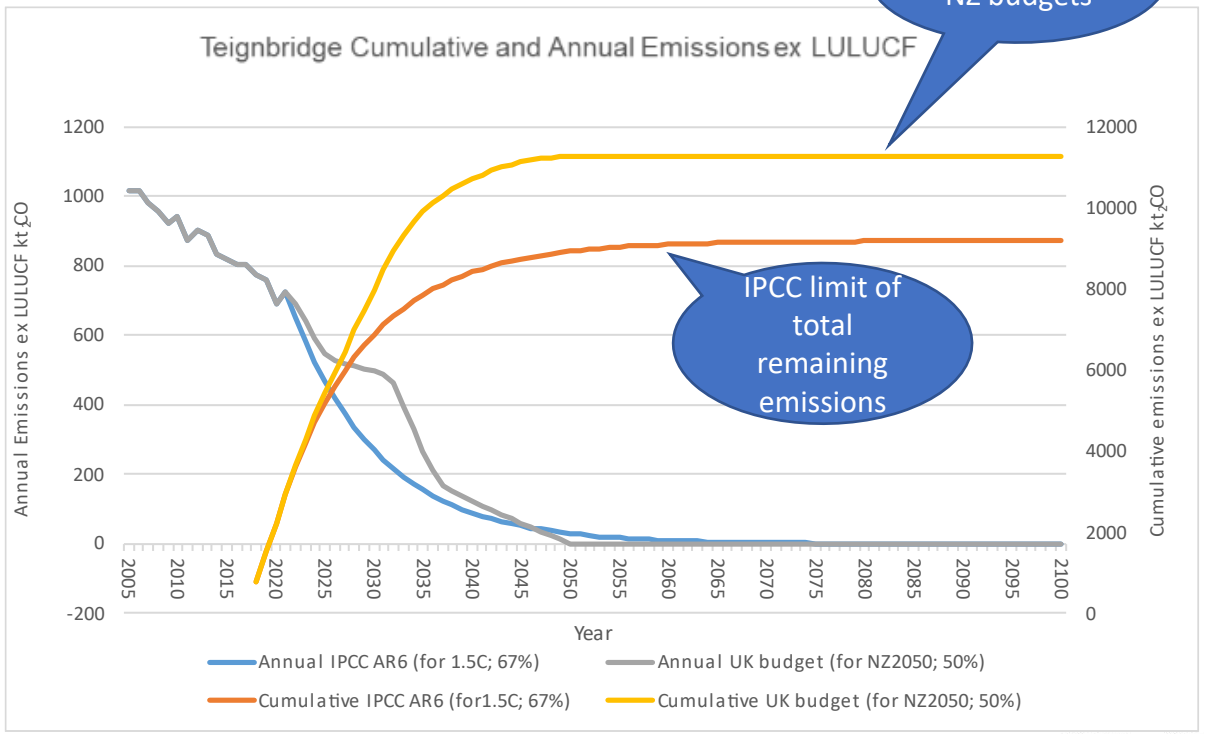



Science Based Targets

For an equitable allocation of global emissions in 2019

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):

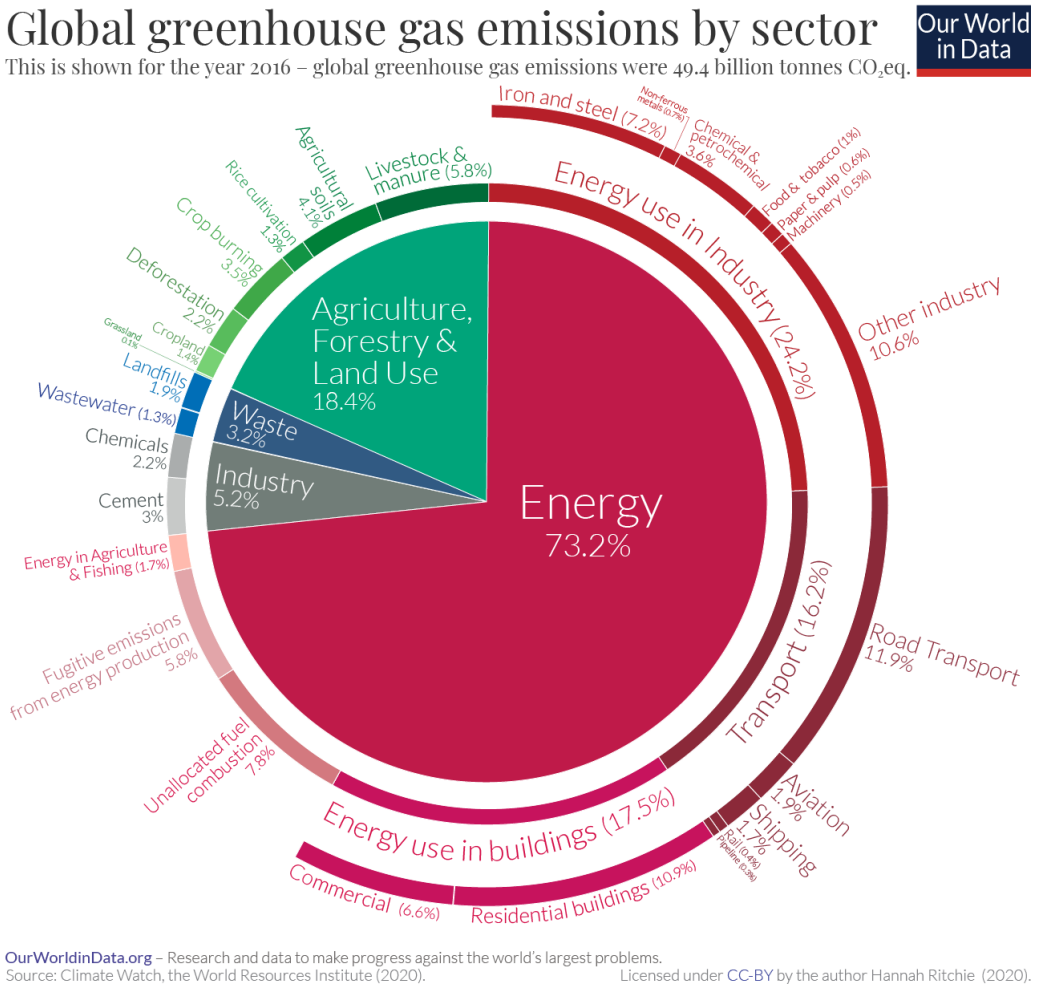
- Carbon dioxide (CO2)> 80%
- Methane (CH4)>10%
- Nitrous oxide (N2O)> 7.0%
- F gases (HFCs,  PFCs, SF6, NF3, etc.)> 3%

## 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.

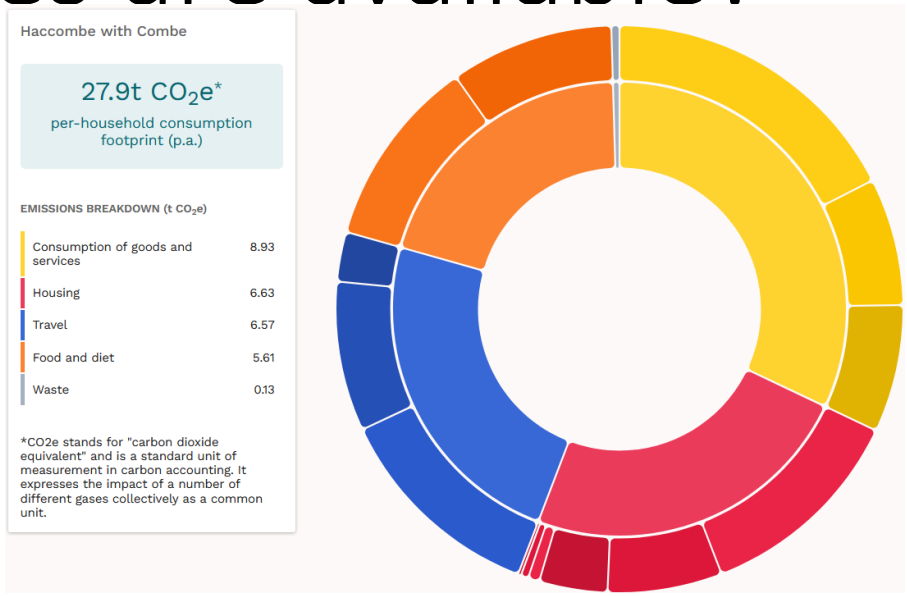
Choose actions which have the fastest/biggest correctly calculated reduction.

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

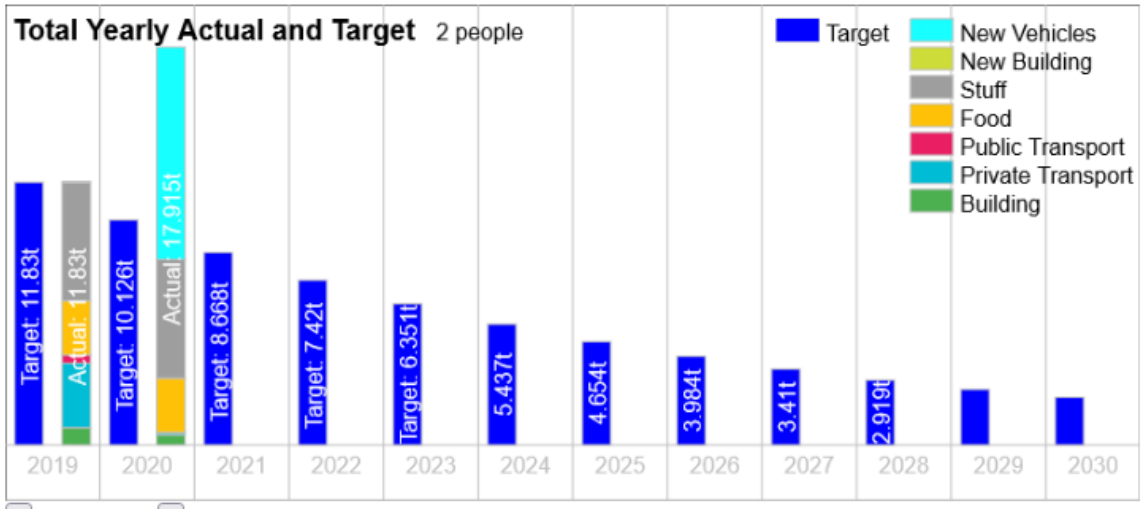
Nothing we do has zero emissions!

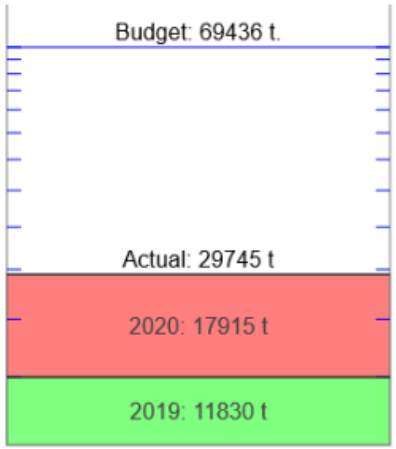
# What tools/processes are available?

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:

- 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