What Can I Do about Climate Change?

Reducing your personal domestic carbon footprint.

Your Home Energy Use.

Your Personal Consumption - mostly food.

Your Actions.

Your Home Energy Use.

16% of your total footprint

(and a fast rising expense)

Your Home Energy Use.

First, Fix the structure and reduce the need for energy

? Get a proper survey (£1000)*

Insulate the roof at least 270mm (11”) 1

Double or triple glaze the windows 3

Fix the drafts 2

GAS

UK average 12,000 kWh/year ~ 4t CO_2 - 11% of your footprint

Boilers

Since April 2005 all new boilers are ‘condensing’

But do they? - Mostly not.
So their energy rating is not A but between C and E

The difference is 10-15% of your energy bill

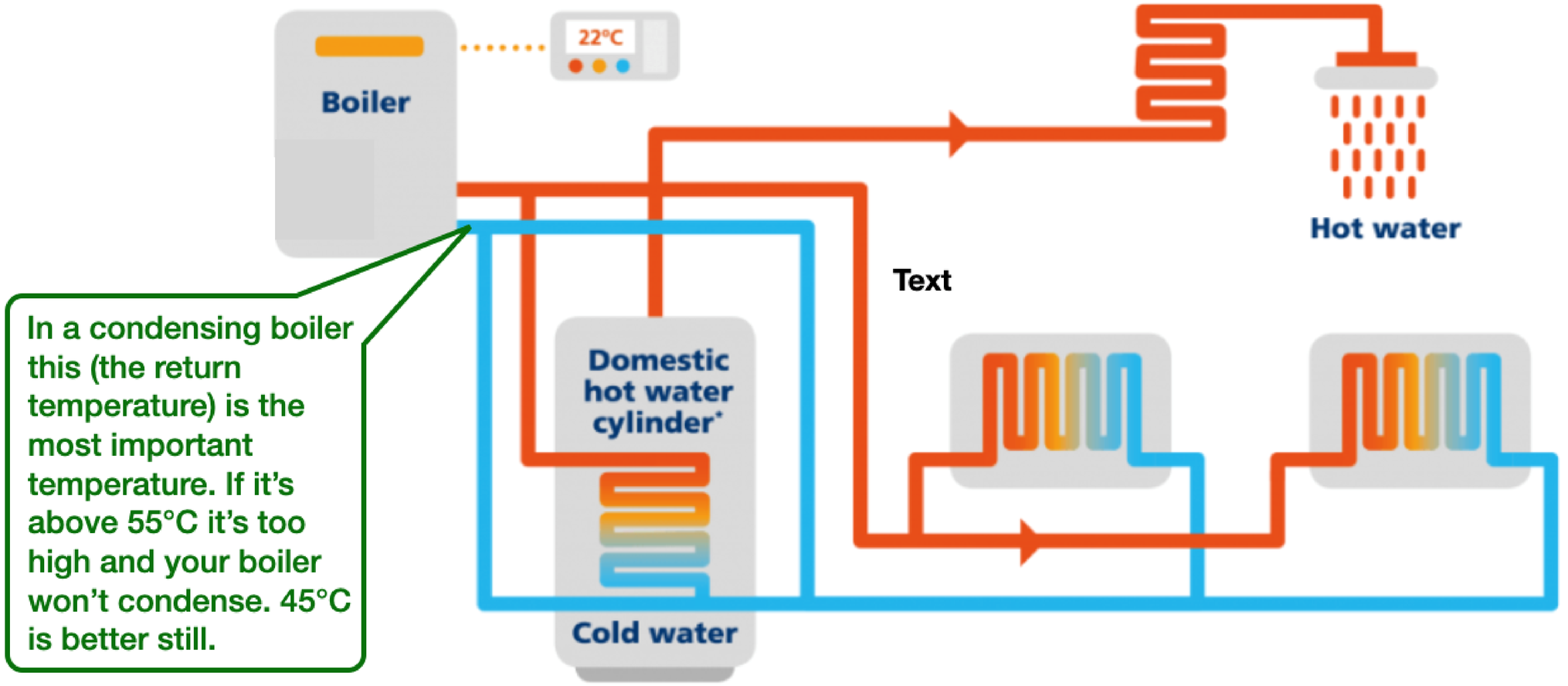
You can change this - or get help to do it.

Most UK boilers are oversized and are therefore automatically less efficient

Most newer boilers have weather compensation

But it is not used - costing ~10% of your energy bill

Boilers


22°C
Boiler
Hot water
Text
Domestic hot water cylinder*
Cold water
In a condensing boiler this (the return temperature) is the most important temperature. If it's above 55°C it's too high and your boiler won't condense. 45°C is better still.

What you can do now

Lower your return temperature on the boiler (not the room stat)
Combi 50C Tank 55C

Check and adjust the pressure it should be between 1 and 2.

Ensure weather compensation is turned on.

Bleed the radiators.

Don’t heat unused rooms.

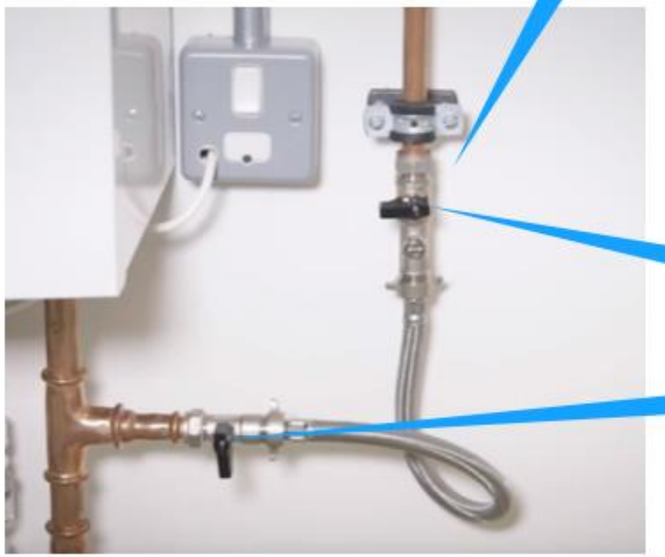
Insulate any hot pipes you can see.

Get programmable thermostats and use them

Run the central heating once a month for 15 mins in summer

Get your boiler regularly serviced by a professional.

Take shorter, cooler showers and bathe with a friend!

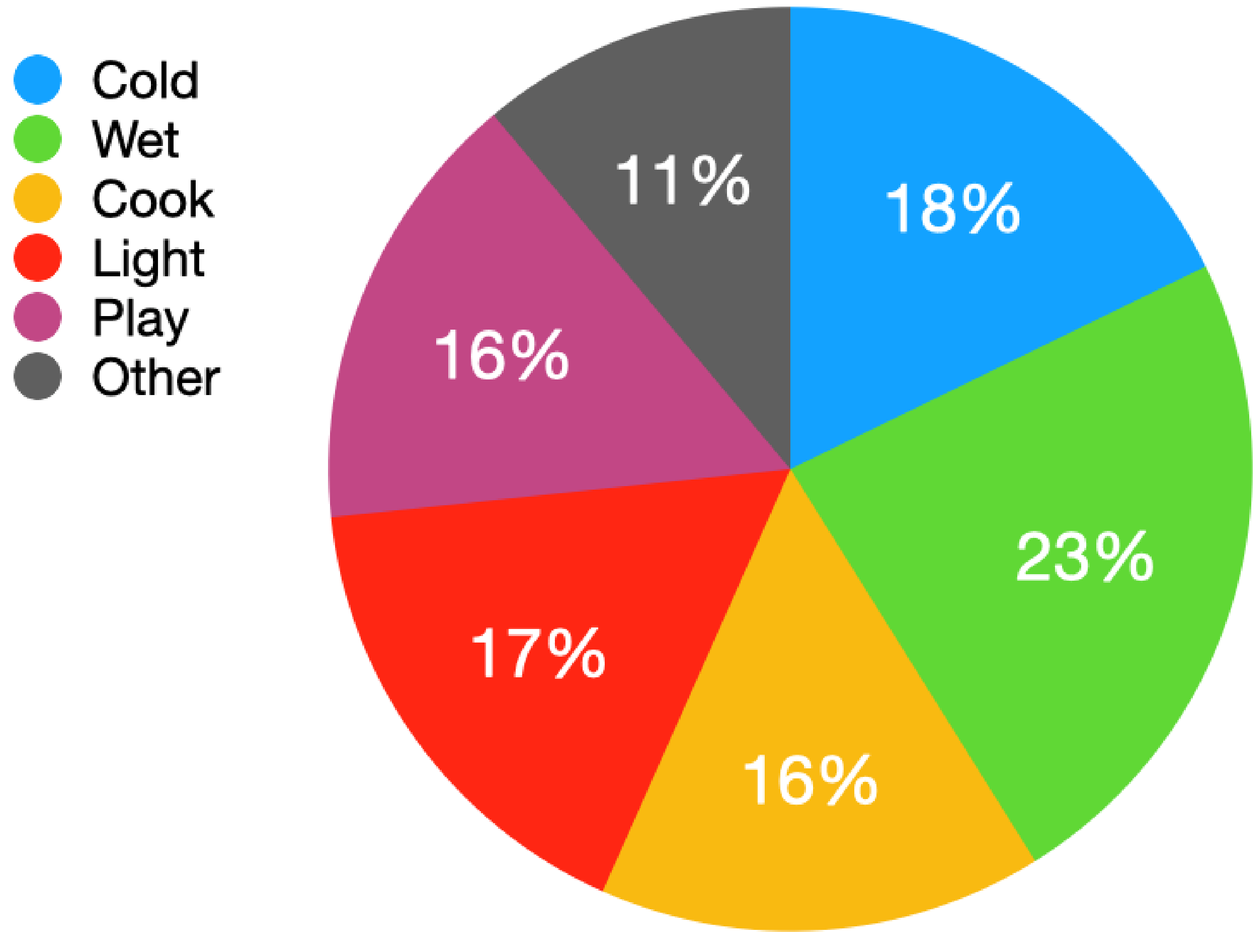


Electricity

UK average 2,900 kWh/year ~ 1t CO_2 - 5% of your footprint

Buy real green energy

Electricity use



Electricity use - Cold 18% Fridges and Freezers

Buy the right size and only A++

Fridge freezers vary between £40 pa and £180 pa

Lowest annual running cost £40.63 lifetime cost £2231 PC(£1500)
Highest annual running cost £178.66 lifetime cost £3766 PC(£500)

Chest Freezers are more efficient especially if kept in the garage. Not next to the oven.

Defrost regularly

Clean the door seals

Don’t overload it

Keep the back clean

All data from Which? May 2022 Electricity at 28p/kWh

Electricity use - Wet 23% Washing Machine, Tumble Dryer, Dishwasher

Tumble Dryer is the most expensive to run,
Use it less often, use it full, use the Eco settings and clean the filter, run it at night.

Lowest annual running cost £38.04 lifetime cost £1560 PC(£799)
Highest annual running cost £174.67 lifetime cost £3701 PC(£300)

Dishwasher is the most used equipment. Use it when it's full, use the Eco settings and keep the filters clean, run it at night.

Lowest annual running cost £60.61 lifetime cost £1378 PC(£349)
Highest annual running cost £104.40 lifetime cost £2055 PC(£280)

Washing Machine. Run full loads, clean the filters, use Eco settings, run it at night.

Lowest annual running cost £25.61 lifetime cost £913 PC(£489)
Highest annual running cost £94.60lifetime cost £2156 PC(£642)

All data from Which? May 2022 Electricity at 28p/kWh

Electricity use - Cook 23% Hobs, Ovens Microwave ovenss

Induction hobs are best followed by radiant. Gas is worst.

Electric ovens beat gas.

Agas and all range cookers are terrible. No matter how they are powered.

Microwave ovens are the most energy efficient,

Combi ovens, combining electricity and microwaves may be the best solution, especially in smaller sizes.

Both Slow Cookers and Pressure Cookers are great.

All data from Which? May 2022 Electricity at 28p/kWh

Electricity use - Light 17%

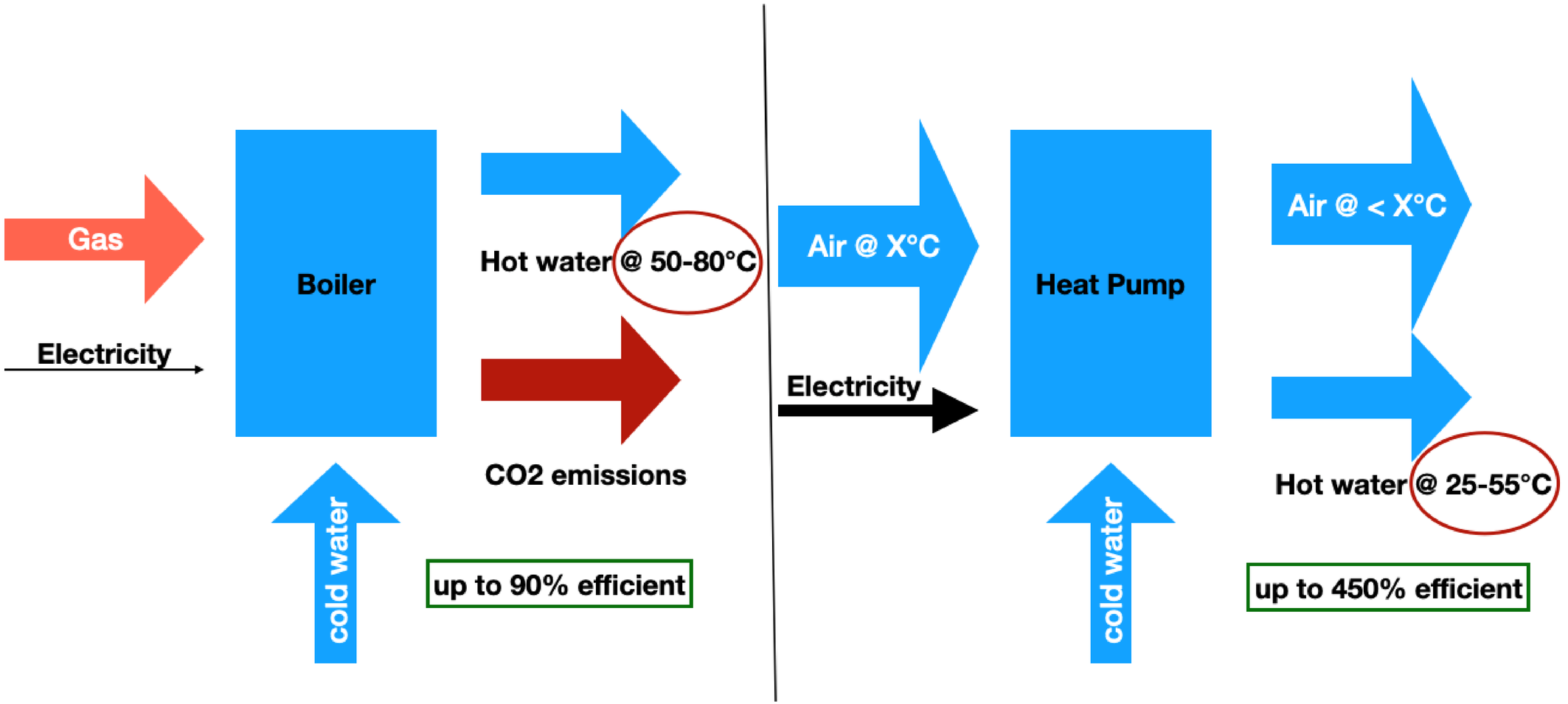
Go LED everywhere

Electricity use - Play and Other 27%

Buy A++ and turn it off when it’s not used.

(But try finding an A++ vacuum cleaner!)

Boilers and Heat pumps - A personal view.



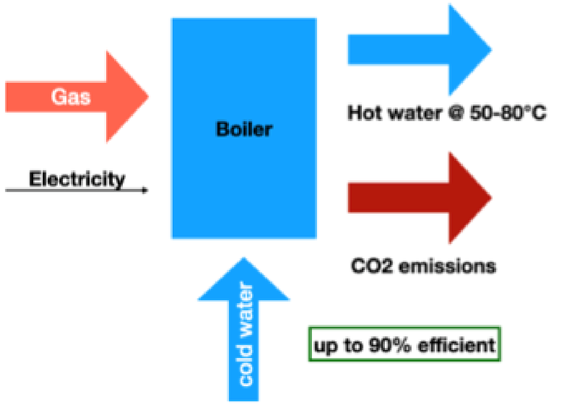
Boilers and Heat pumps - A personal view.

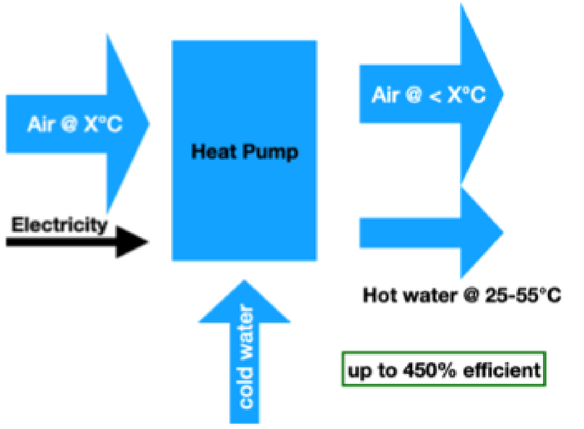
Boilers are boxes, heat pumps are systems

If you have a well maintained correctly sized condensing boiler, less than 10 years old which condenses and has functioning weather compensation and modern controls - WAIT - avoid the cowboys and idiots.

Over the next 5-10 years the heating industry will undergo a major change as heating engineers are properly trained and the heat pump industry and the boiler manufacturers get to grips with reality.

If you must do something now have your house surveyed by a professional.





Solar PV and Solar Hot water

SHW will save you £150-£200 a year at high energy prices (£55-£80 at the old prices) and cost £2000+ to install but check your cylinder first. 25yr+life

Solar PV is good for a low energy house and useful for others if you can use it all. Adding a battery is expensive with a long payback (5-10 years) An electric car equipped with vehicle to load (V2L or V2G) charging will be a better bet.

Food

~ 25% of your 12.7 tonnes (and a fast rising expense)

Eat food, mostly plants, mostly local, not too much.

Eat less meat and diary

Especially beef and lamb

If you must then buy grass fed UK upland produce

Eat everything you buy

UK average waste is 20%!!!!

Batch cook and use the fridge and freezer

Buy local, and seasonal

Avoid air freighted goods

Buy loose goods with no packaging

Food	kg of CO2/kg food
UK chicken	3.8
UK beef	25
Imported beef from deforested land	83.3
Fresh UK mackerel	2.1
Farmed UK salmon	4.1
Fresh UK Milk	1.9
Oat milk	0.2
Soya milk	0.4
UK Potatoes and roots	0.3
UK Onions	0.5
UK Tomatoes in season	1.3
Spanish Tomatoes by road	2.5
Asparagus by air from Peru	18.5

This is not nutritional information!

An Alternative view of food

- **The average person requires 2,350 kcal (calories) per day - less for an older person.**
- **World food and agriculture production <u>today</u> produces 9,750 kcal/day.**
- **But there are only 2520 kcal/day available for eating as most of the rest is feed for livestock.**
- **5550 kcal/day produces only 590 of meat and diary calories.**

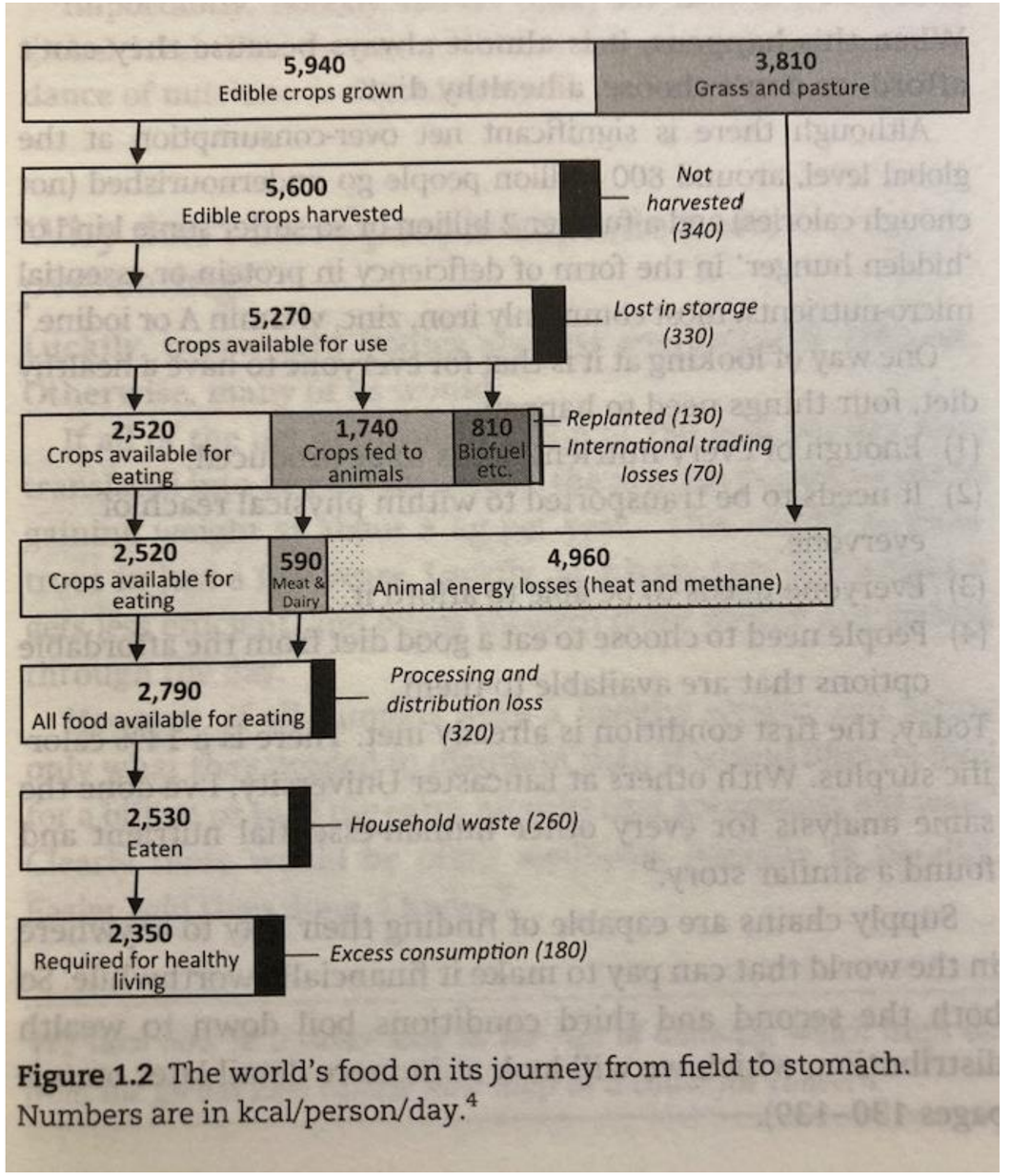


Figure 1.2 The world's food on its journey from field to stomach. Numbers are in kcal/person/day.[4]

Source: There is no Planet B Mike Berners-Lee, Cambridge University Press

Questions?