

Net Zero by 2050 (and a clean grid by 2030)





Department for
Energy Security
& Net Zero

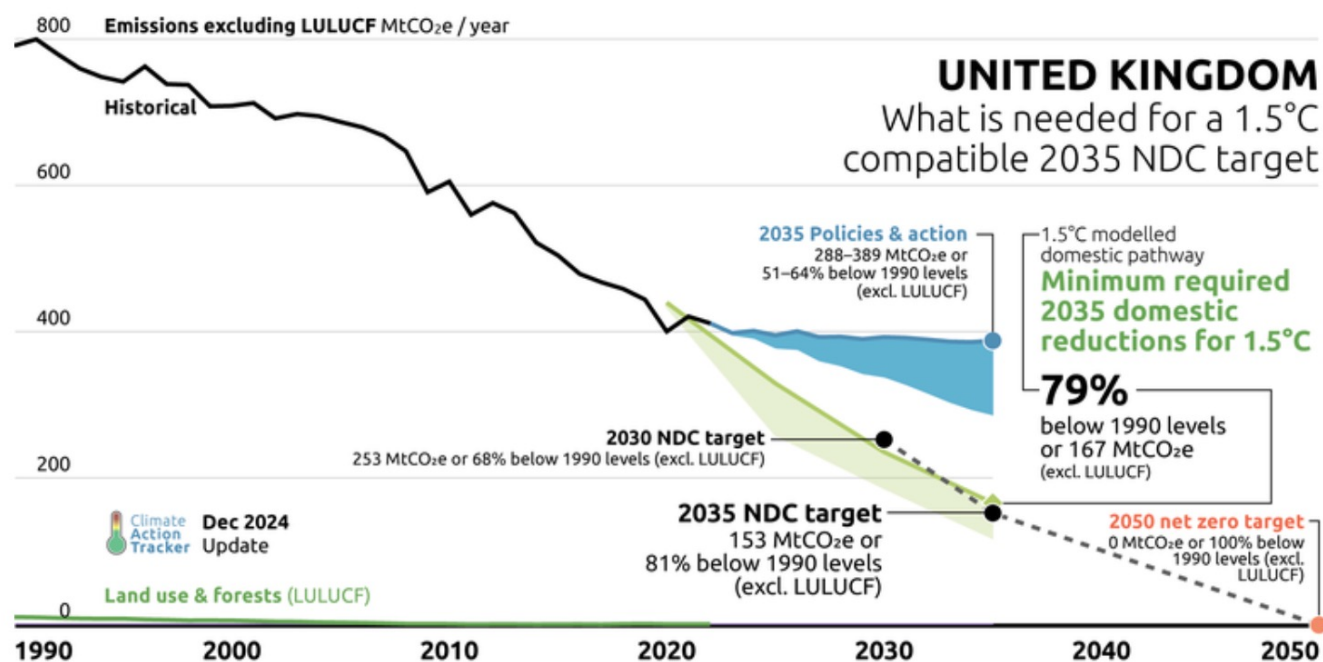
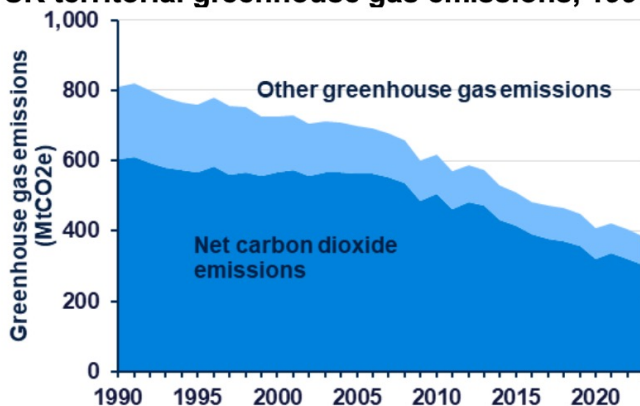


2023 UK Greenhouse Gas Emissions, Final Figures

6 February 2025

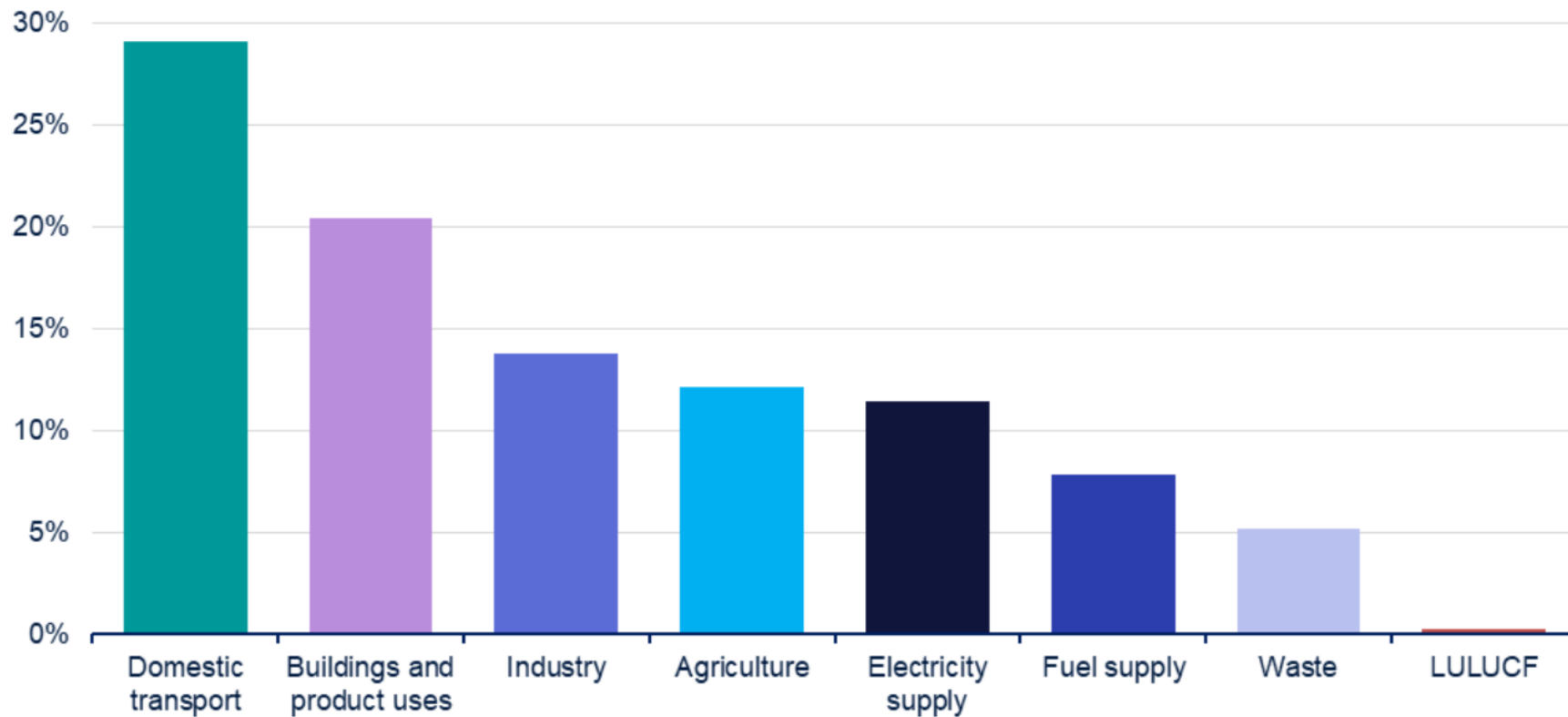
Accredited Official Statistics

UK territorial greenhouse gas emissions, 1990-2023



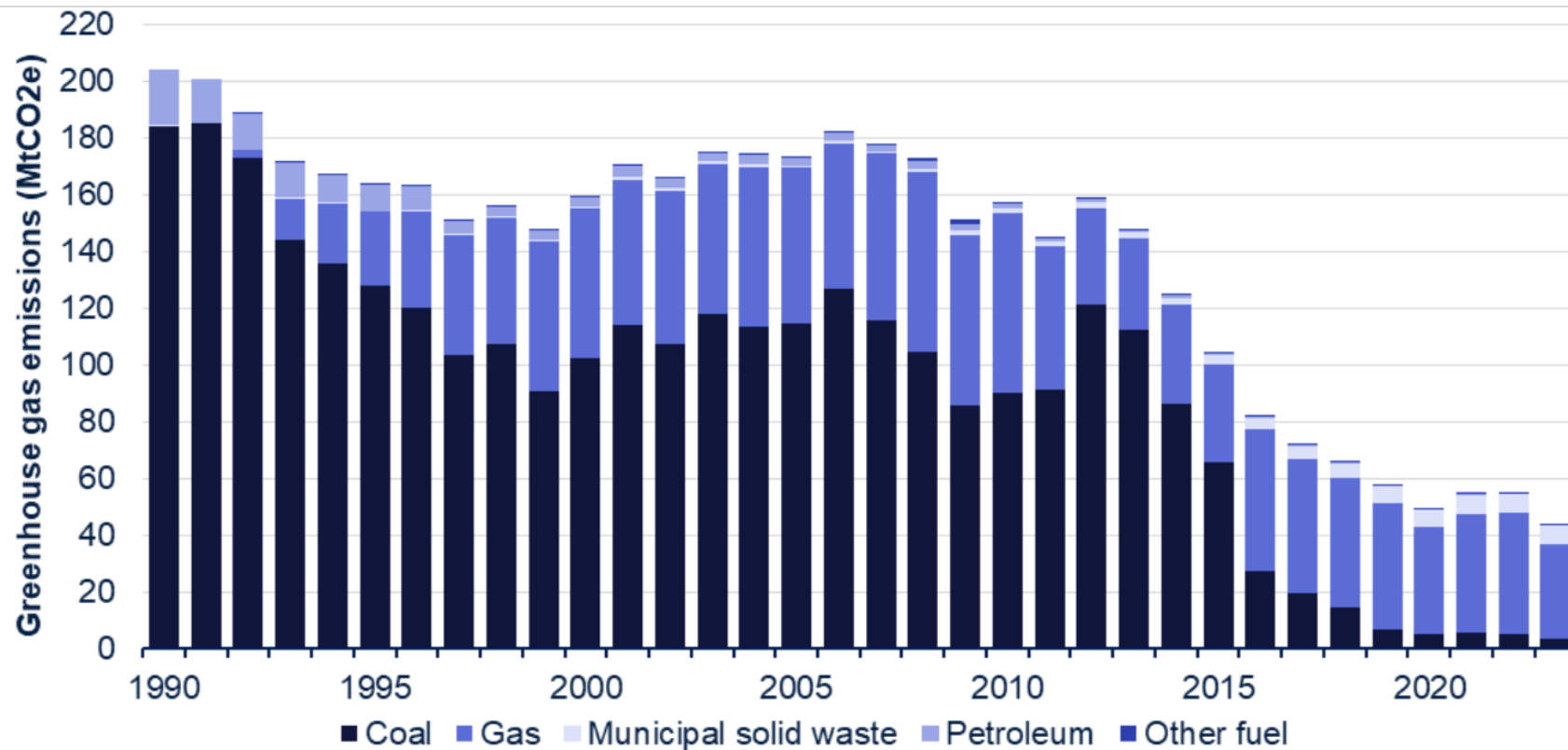
Where's it coming from?

Figure 5: Territorial UK greenhouse gas emissions by TES sector, 2023 (%)



A big success story:

Figure 10: Greenhouse gas emissions from electricity supply, 1990-2023 (MtCO₂e)



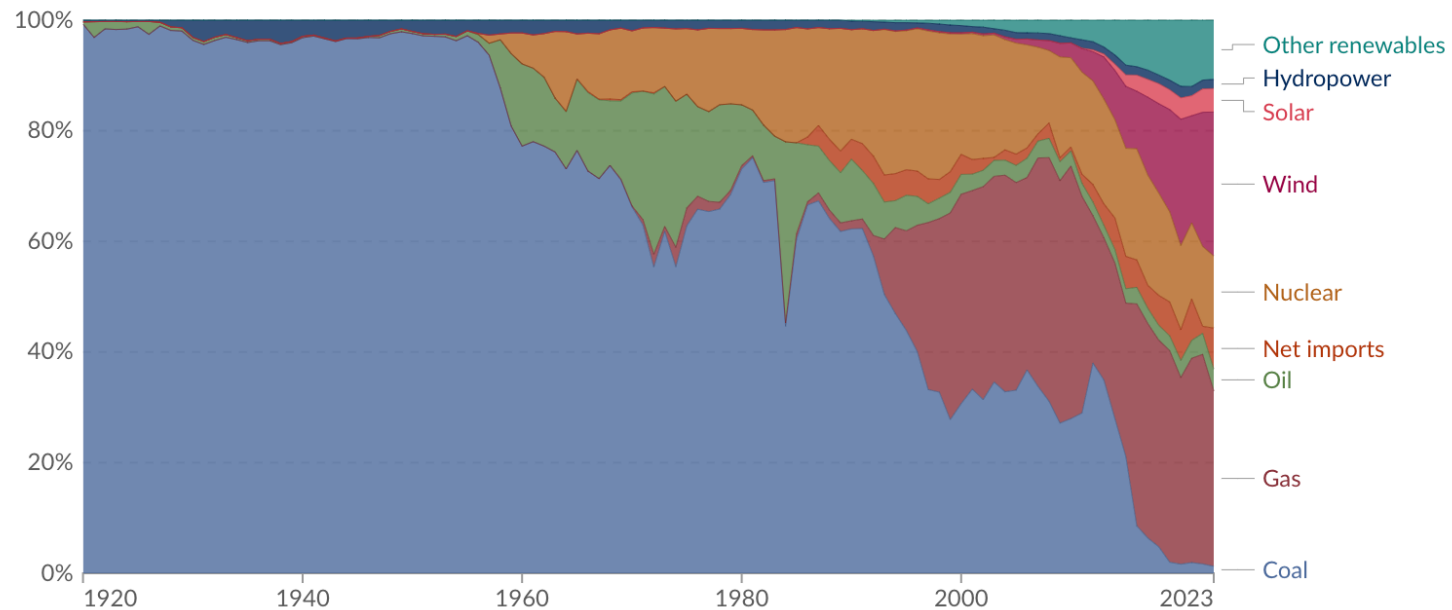
Transition to gas and renewables

Electricity production in the United Kingdom

Our World
in Data

Table Chart

Settings



Clean Power 2030 – (Great British Energy Bill)

- 50 GW offshore wind (current = 15)
- 30 GW onshore wind (current = 15) [ending de facto ban]
- 45 GW solar power (current = 17)
- 25 GW battery
- Extend nuclear plant lifetime, push new ones
- Maintain 35 GW gas reserve capacity
- Reform grid connection queue
- Big renewable boost in latest energy auction (sept '24)

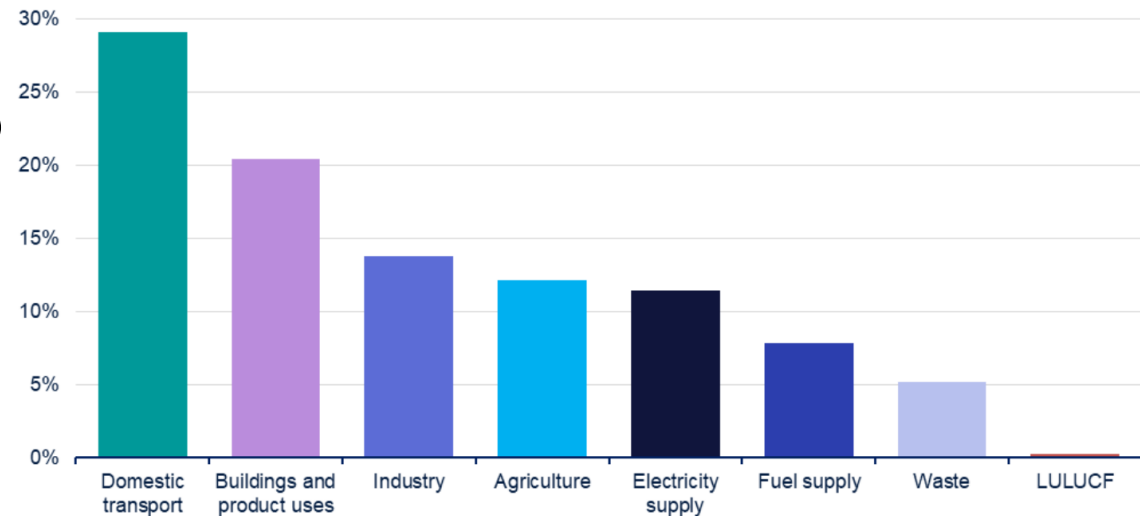
How to deal with the rest by 2050?

Immediate Alternatives:

- Transport -> electric
- Heating -> electric (heat pumps), insulate homes better (£6.6bn warm homes plan)
- Cooking -> electric (induction hobs)
- Go vegan (esp. not cows)
- Don't send biodegradable waste to landfill, or burn its gases
- Night trains to Europe ('23: 70% of int'l flights from UK)

Somewhat Alternatives:

- 'Green' cement
- SAF – Sustainable Aviation Fuel (Government mandate: 2/10/22% of all fuel by 2025/30/40)
- 'Green' fertilizers?

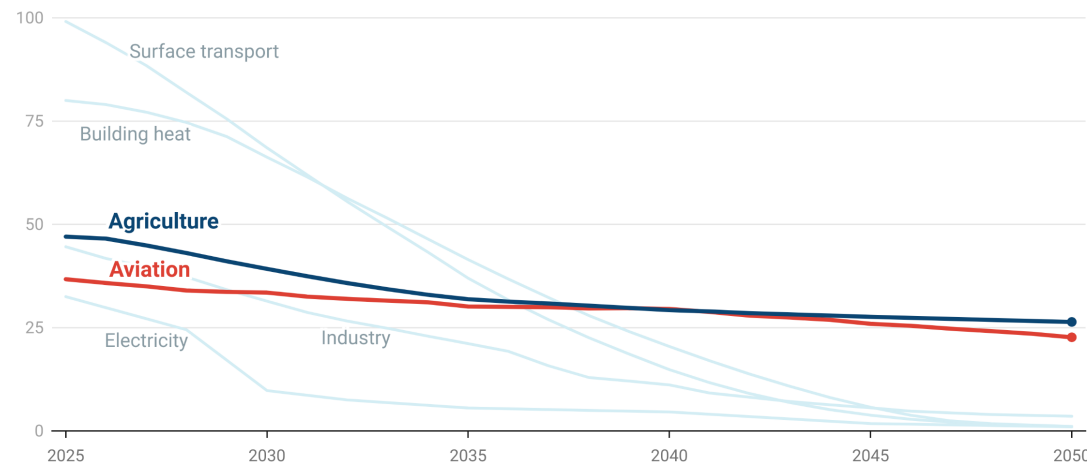


Climate Change Committee's Plan

- Balance agriculture and aviation with natural carbon sinks & engineered removal
- Heat pumps, electrified transport, insulation, less red meat
- No route without carbon capture and storage!
- ~£6-23bn/year public spending, never >2%
- Electric arc furnaces for steel

Agriculture and aviation would dominate UK emissions by 2040

Emissions of top six sectors, MtCO₂e

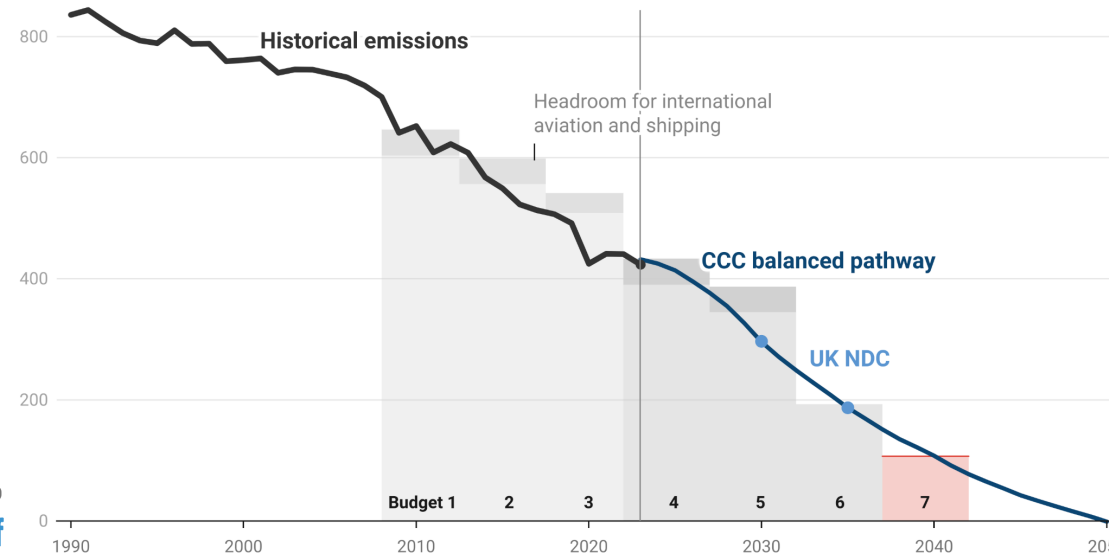


Source: CCC

CarbonBrief
CLEAR ON CLIMATE

UK 'should cut emissions 87% by 2040', CCC says

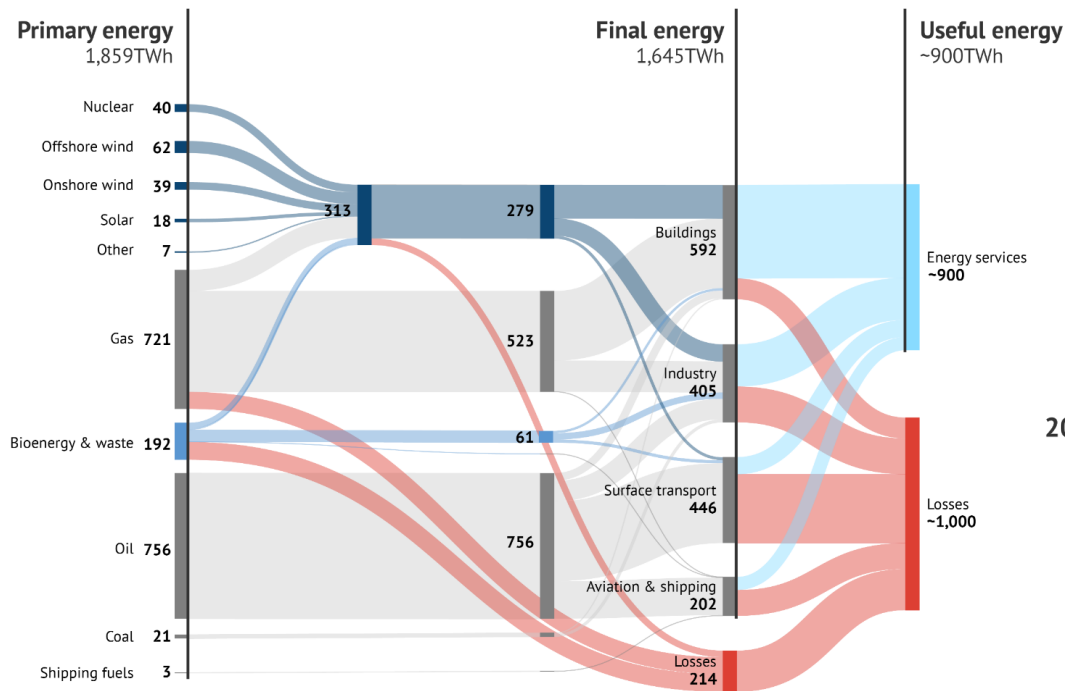
UK emissions and carbon budgets, MtCO₂e



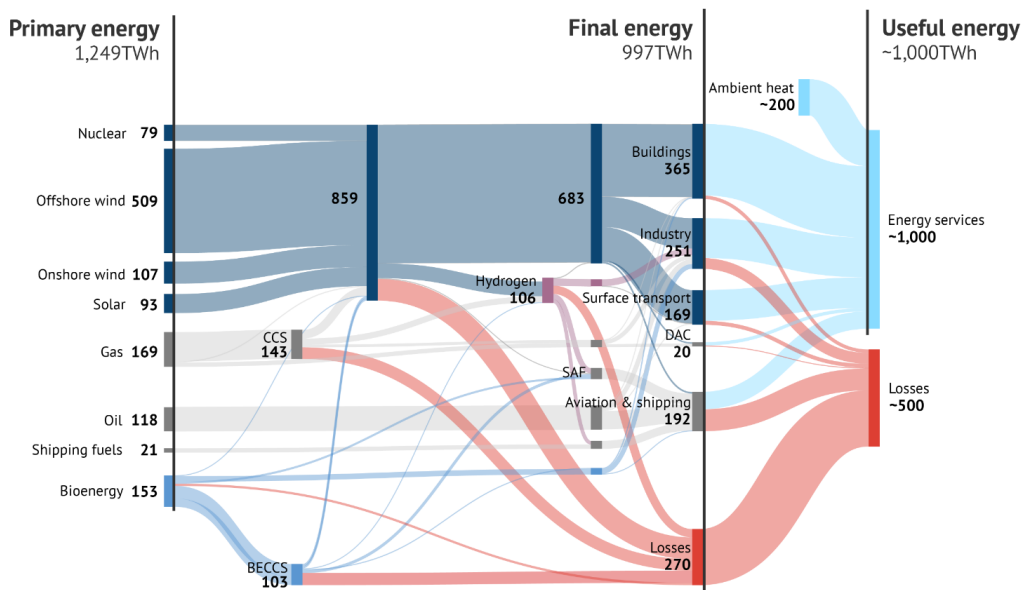
Electrification will power UK's shift to net-zero and cut waste

Energy flows through the UK economy, terawatt hours

2025 energy system



2050 energy system



Source: CCC

What should/can WE do?

- Eat less meat (esp red)
- Fly less (no Gatsby funded planes in Europe?)
- Homeowners: insulate, heat pumps, etc