Committee on Climate Change

Independent advice to government on building a low-carbon economy and preparing for climate change

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Reducing emissions in the UK

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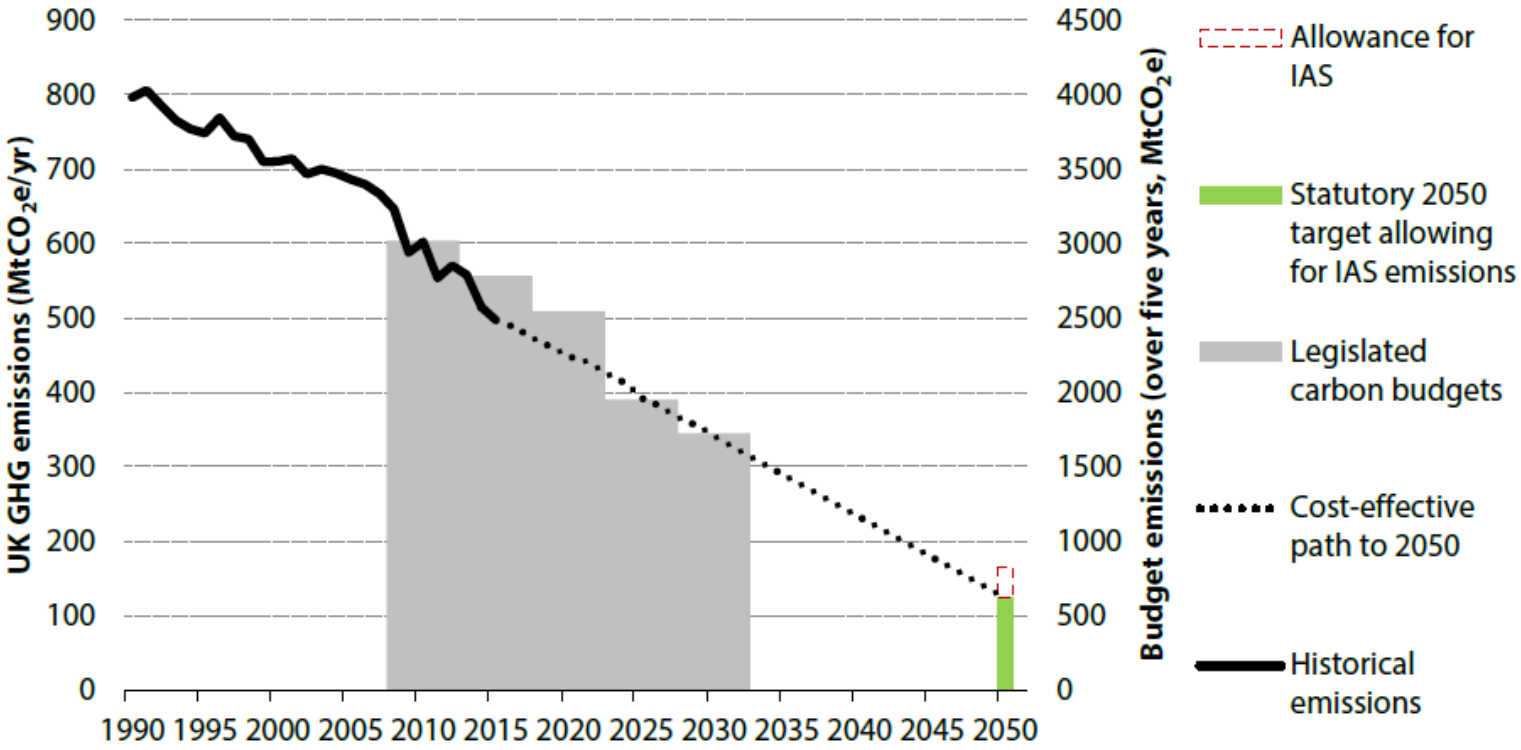
The Climate Change Act

The Climate Change Act 2008

1	**A goal**	**2050 Emissions Target**
2	**A pathway**	**Carbon Budgets**
3	**A toolkit**	Requirement that Government brings forward **policies**
4	**A monitoring framework**	**Committee on Climate Change** to monitor progress and suggest changes

UK has 5 legislated carbon budgets that are stepping stones to the 2050 80% target

Carbon budgets and the cost-effective path to the 2050 target



IAS = International aviation and shipping (not included in carbon budget accounting)

Source: CCC (2015) The Fifth Carbon Budget [updated to reflect that fifth budget is now legislated]

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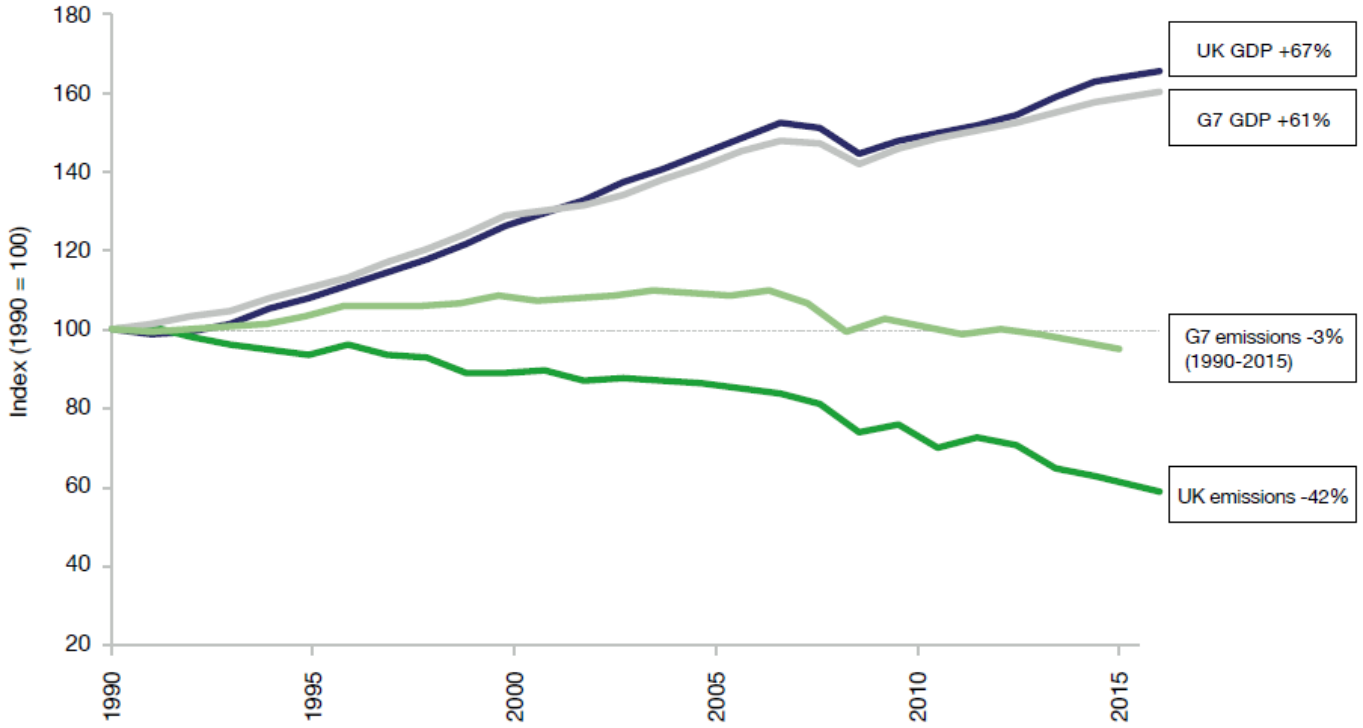
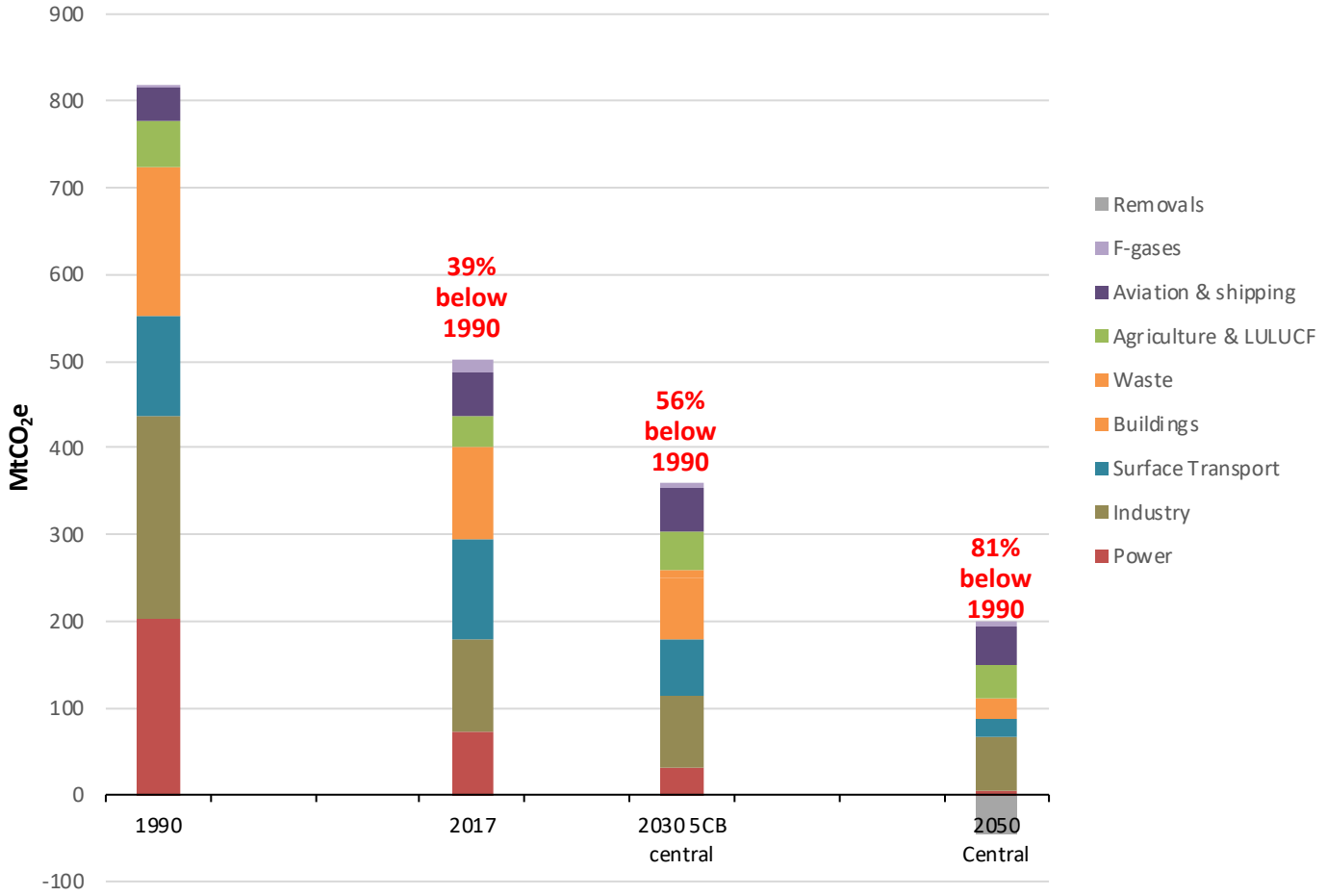
The Clean Growth story

UK has grown the economy and cut emissions faster than the G7

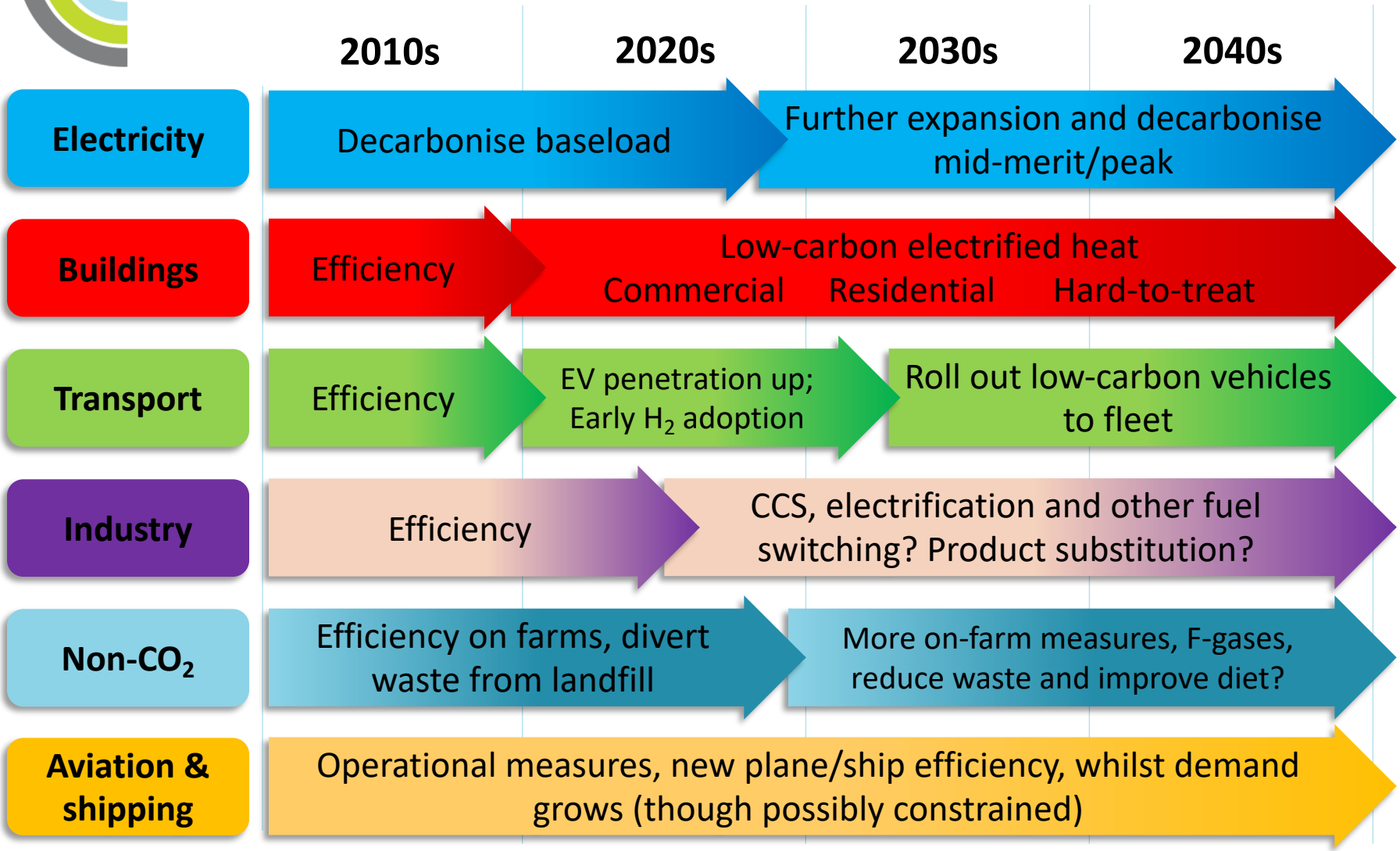


Source: UK Govt (2017) The Clean Growth Strategy

Our fifth budget central scenario is on track to 80% target in 2050



The broad story behind our scenarios to 2050



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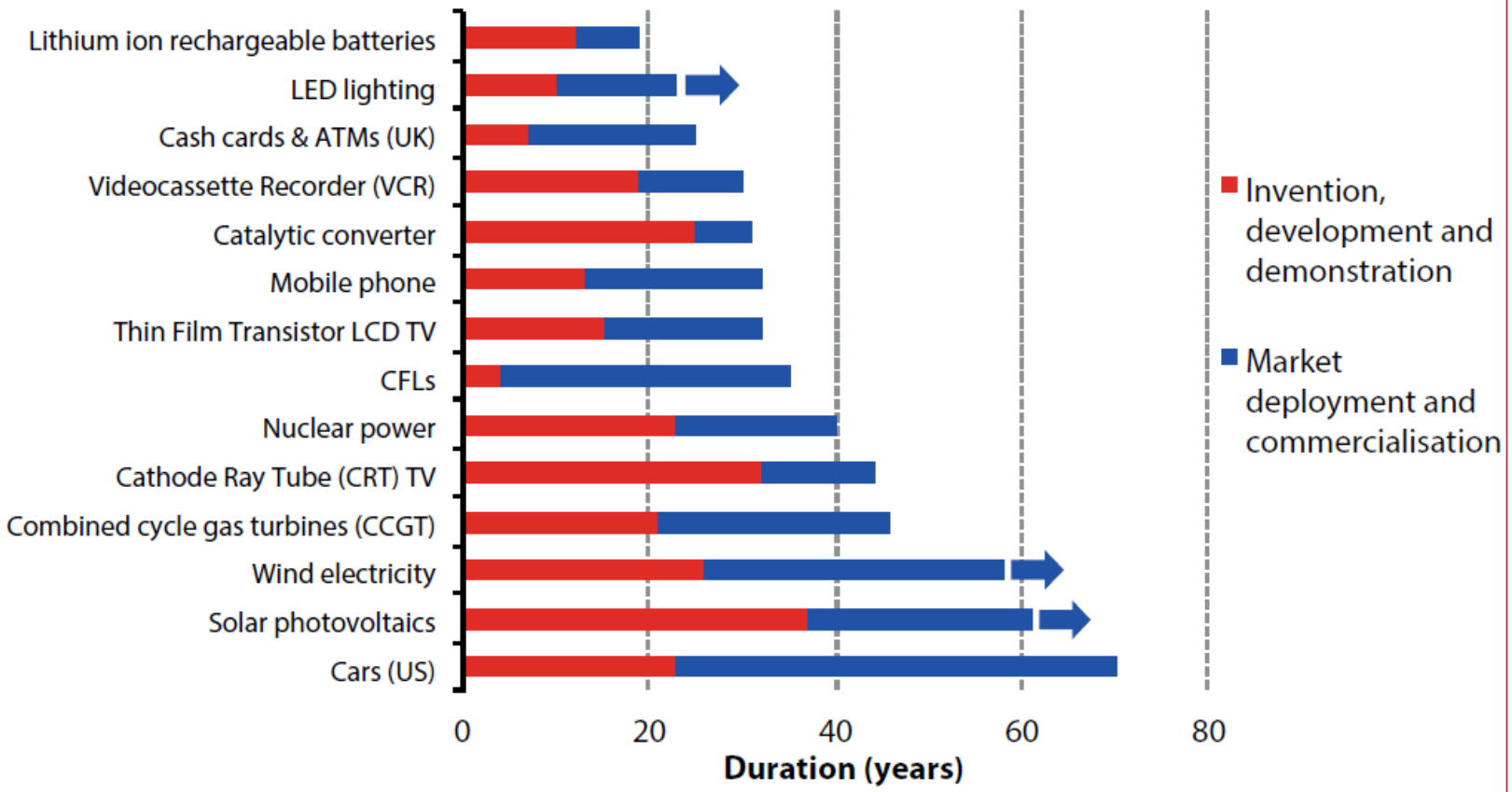
UKERC (2015) collated evidence on innovation timelines

Figure B3.6: Time taken for development and commercialisation of a range of innovations



Source: UKERC (2015) *Innovation timelines from invention to maturity: A review of the evidence on the time taken for new technologies to reach widespread commercialisation.*

Why is CCS important?

Heavy industry Up to 36 Mt of abatement from CCS in industry across the cement, chemicals, iron & steel and refining industries by 2050.	**Hydrogen** Over 100 Mt of abatement from hydrogen production via gas-reforming, if using hydrogen to decarbonise heating in the UK.
Removals Around 50 Mt of abatement from bioenergy with CCS, to offset residual emissions in hard-to-decarbonise sectors.	**Electricity generation** Potential role for baseload and mid-merit generation in the power sector.

> CCS halves the cost of meeting the 2050 target.

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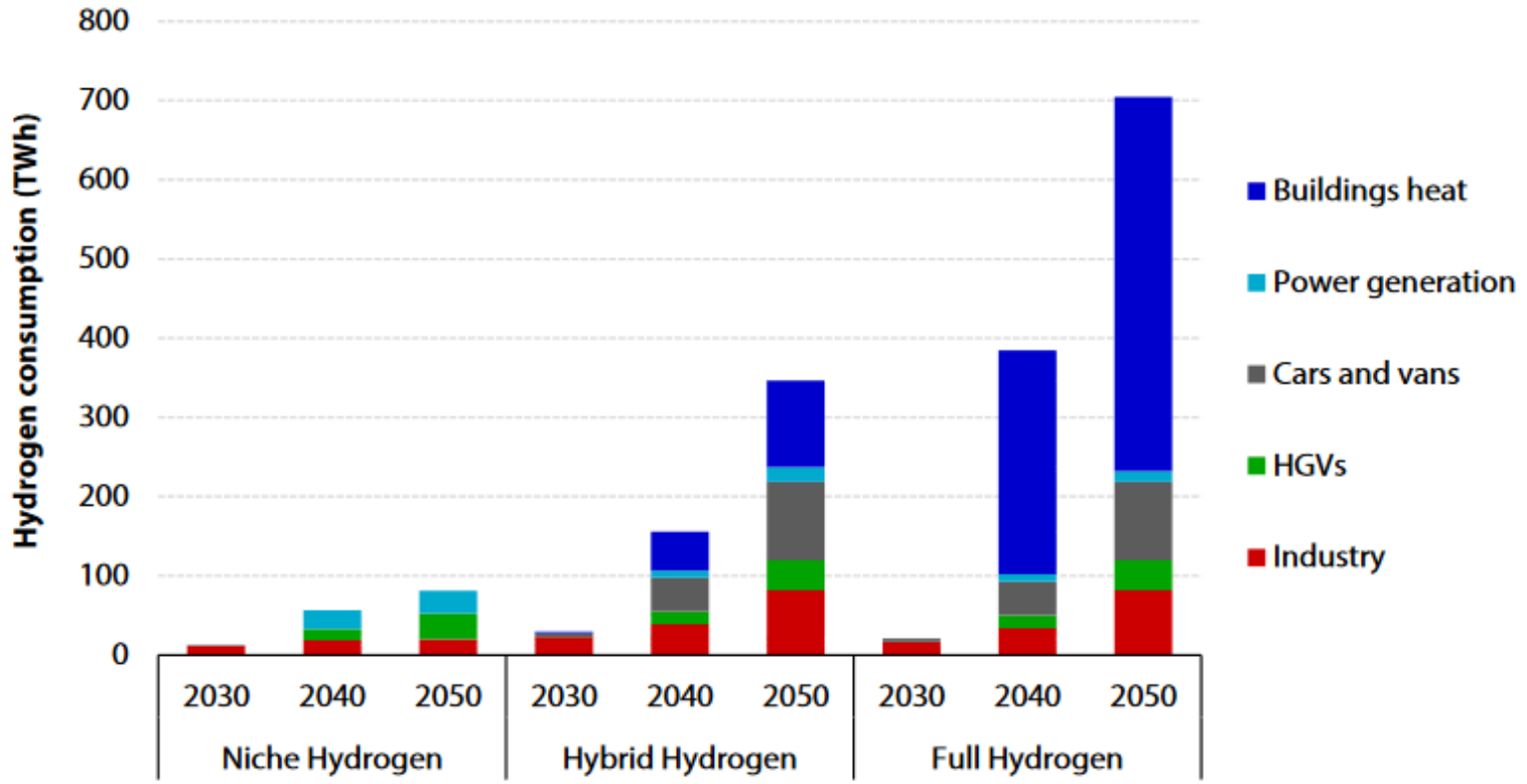
Hydrogen

Figure 4.1. Demands in the Full Hydrogen, Hybrid Hydrogen and Niche Hydrogen scenarios (2030-50)



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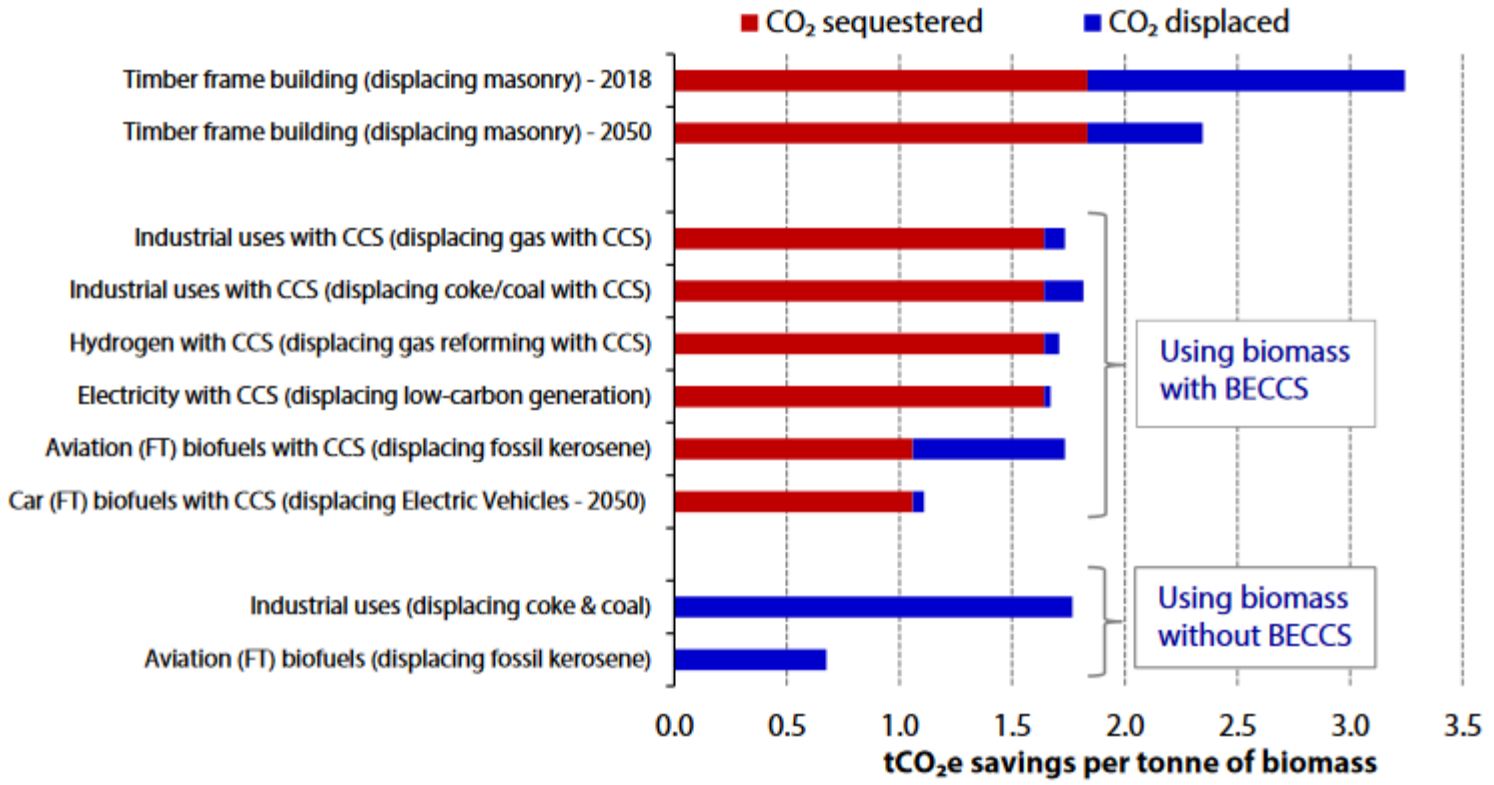
Bioenergy

Figure 5.2. Estimated GHG abatement across different biomass applications



What's worked in the past, and what's needed?

What's worked?

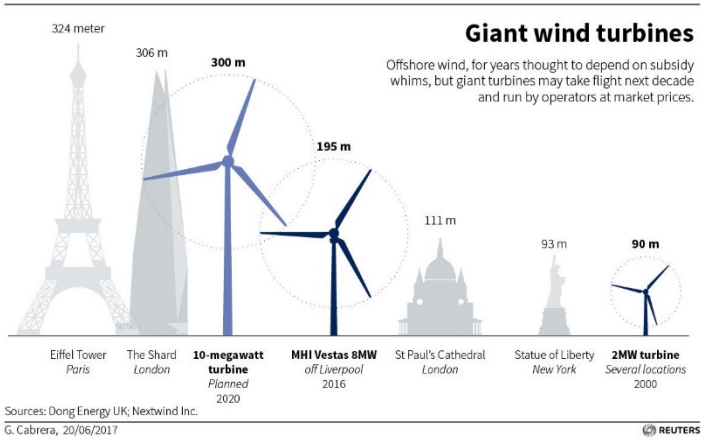
- energy efficiency in buildings,
- long-term contracts for low-carbon power,
- coal phase-out,
- carbon pricing in the traded sector,
- landfill tax.

What's needed:

- CCS
- Policy framework for heat in buildings
- Policy framework for industry
- EV infrastructure
- Hydrogen production

What's next? – ending the UK contribution to climate change

Big changes…



…raise big questions:

- Should UK reduce emissions to net zero?
- By when?
- How can it be done?
- Costs and benefits?

…with implications across the economy:

- More power; all low-carbon
- Hydrogen & CCS
- Electric vehicles & heating
- Changes in industry, agriculture

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Thank you!

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