Committee on Climate Change

October 2019

UK Committee on Climate Change: Experience with carbon budgets

Mike Thompson
Director of Analysis, UK CCC

Committee on Climate Change

Contents

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Part 1: The UK Climate Change Act

The Climate Change Act: locking into climate action and throwing away the key

Climate change

- Long-term
- Global
- Uncertain

***Whether* to cut emissions?**

Climate Change Act 2008

Carbon budgets

- Near-term
- Local
- Definite

***How* to cut emissions?**

Driving change & 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

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Part 2: The UK CCC

CCC appointed to recommend targets and monitor progress – an expert group, not an interest group

Lord Deben

Baroness Brown

Professor Piers Forster

Professor Keith Bell

Dr Rebecca Heaton

Professor Corinne Le Queré

Paul Johnson

Professor Nick Chater

Supported by full-time secretariat of ~20 analysts

The Committee draws on a wide range of evidence in developing its advice, building scenarios and monitoring

Source: CCC (2015) The Fifth Carbon Budget

Some ‘soft’ things we try to do…

Reporting

- Telling stories with evidence
- Doing the easy/obvious things thoroughly

Analysis

- Using models intelligently & avoiding black boxes
- Not being afraid of uncertainty or best guess assumptions
- Erring on the side of making things harder/more expensive

Judgements

- Understanding what judgements matter, being transparent about them and justifying them
- Trying to be holistic

Tackling inertia

- Being bold and thinking beyond current constraints – creating the future not predicting it

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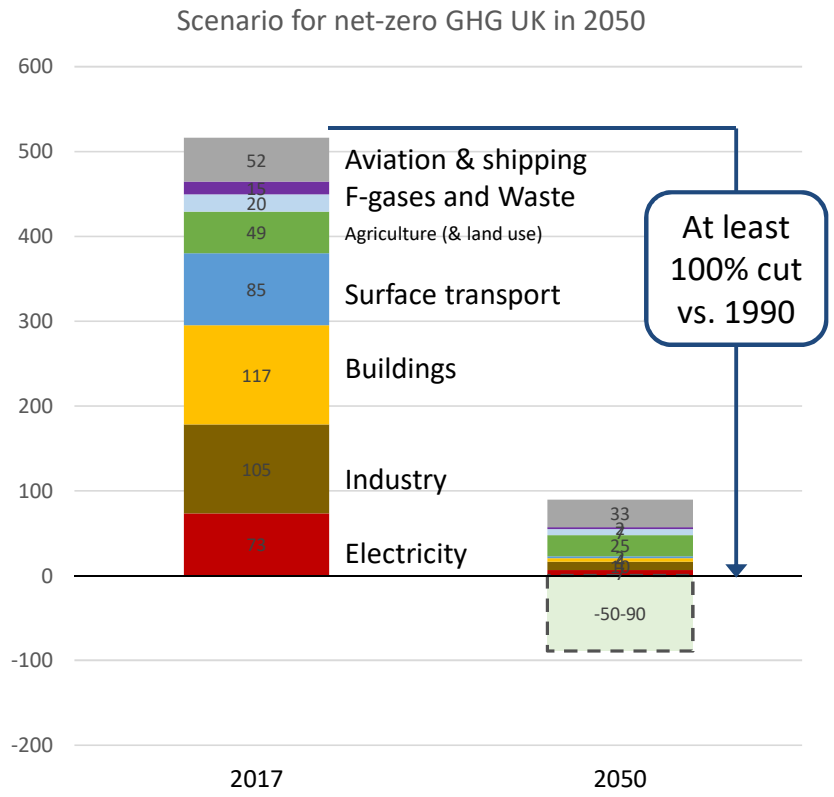
Part 3: Setting carbon budgets

The Climate Change Act now aims to end the UK's contribution to global warming

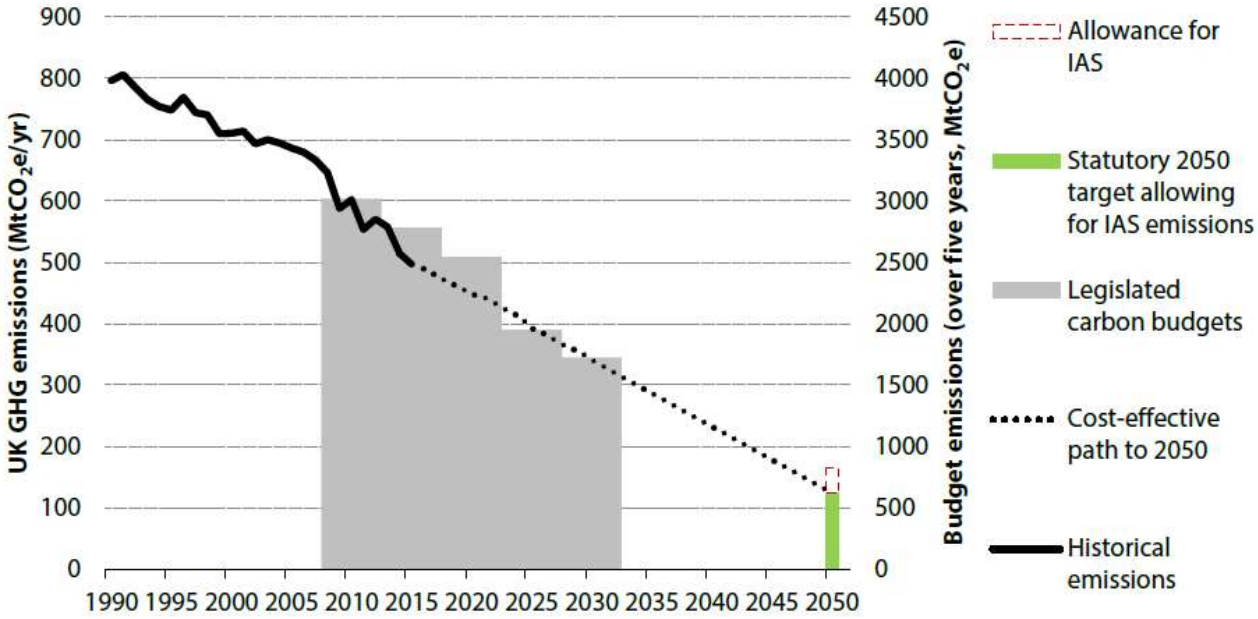
UK 2050 target: -100% v 1990 (originally set at -80%)

- Aligned to 1.5^{O}C global objective
- net-zero all GHGs = ahead of global average
- Achievable using known technologies
- Small impact on GDP: at worst, economy expected to double in size by late-2050, rather than January 2050 without action to cut emissions



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

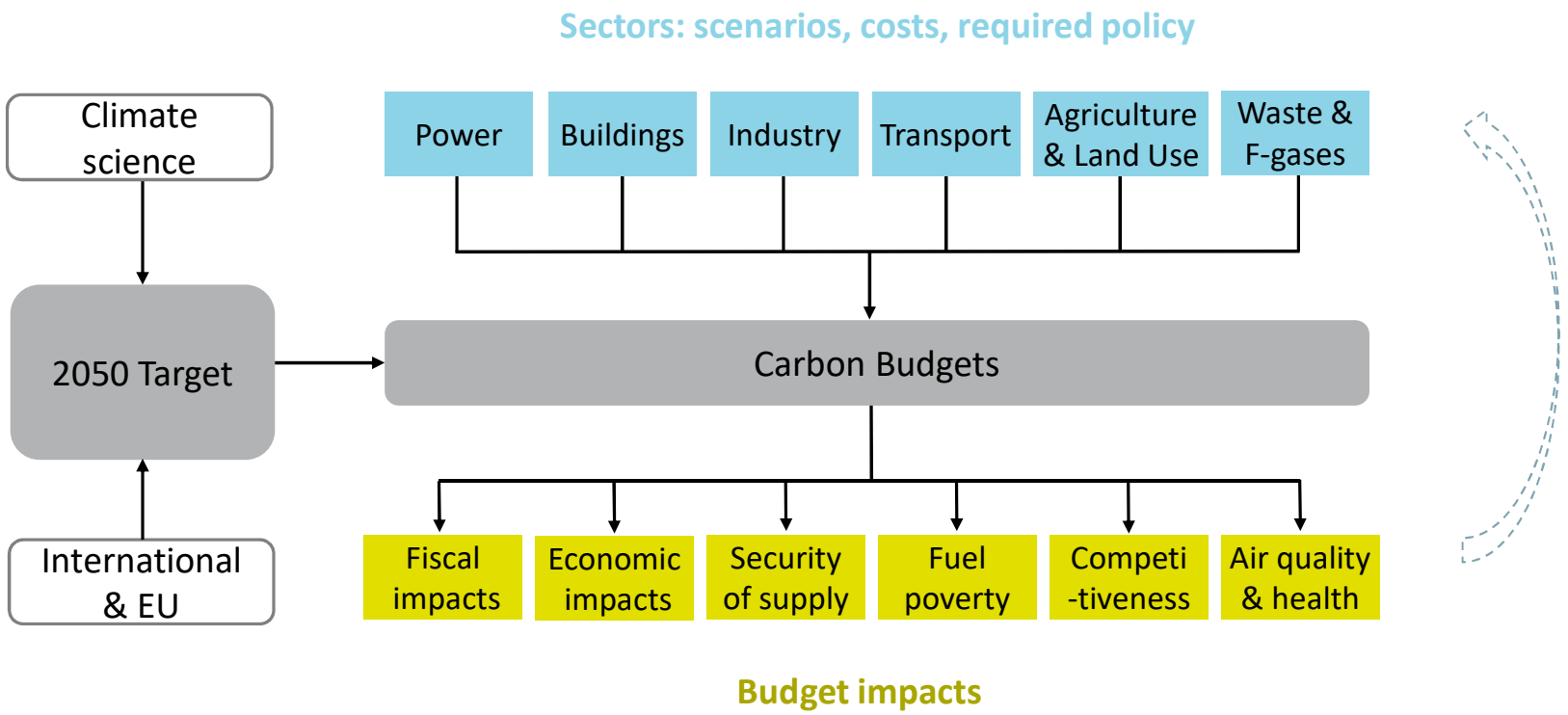
Carbon budgets and the cost-effective path to the 2050 target



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]

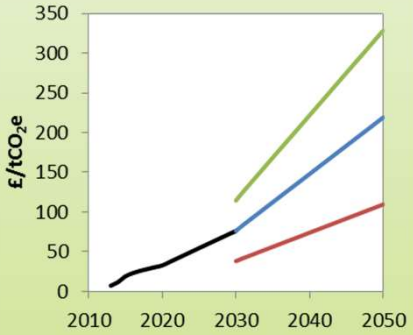
Carbon budgets are evidence-based and take into account a range of factors across the economy



CCC pathway building: carbon budgets are set on the 'cost-effective path' to the 2050 target, built up from analysis of each sector

Statically cost-effective measures

- Cost-saving vs. Gov't carbon price in near term

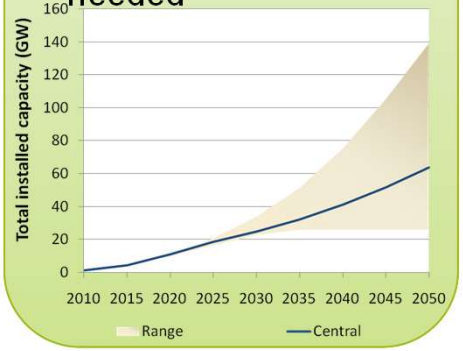


- Feasible deployment rates

e.g. energy & vehicle efficiency, nuclear power, some bioenergy

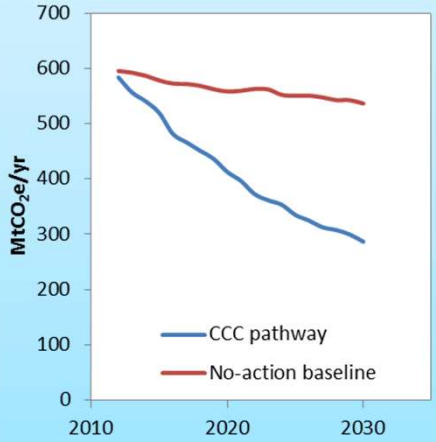
Dynamically cost-effective measures

- Become cost-saving vs. Gov't price projections for 2020-2050
- Enough build of key measures for upper end of 2050 levels if needed



e.g. offshore wind, electric vehicles, heat pumps

UK emission pathway



Some key takeaways from 2050 scenarios in face of uncertainties

Strategic priority: Decarbonised electricity

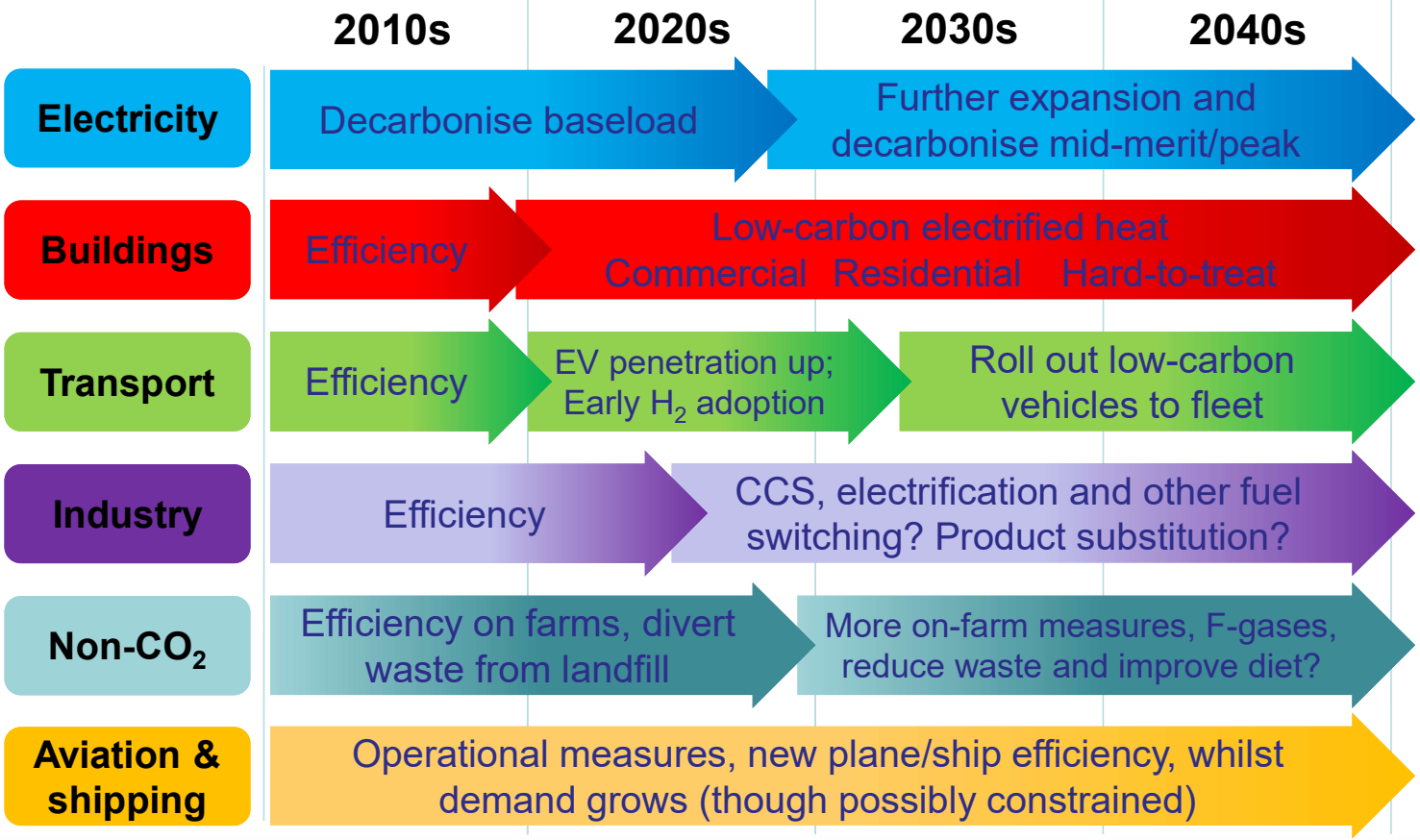
Avoiding lock-in: Don't build new coal

Developing options: offshore wind, CCS, bioenergy, electric vehicles

Research questions: [industry], agriculture, aviation, CO_2 removal

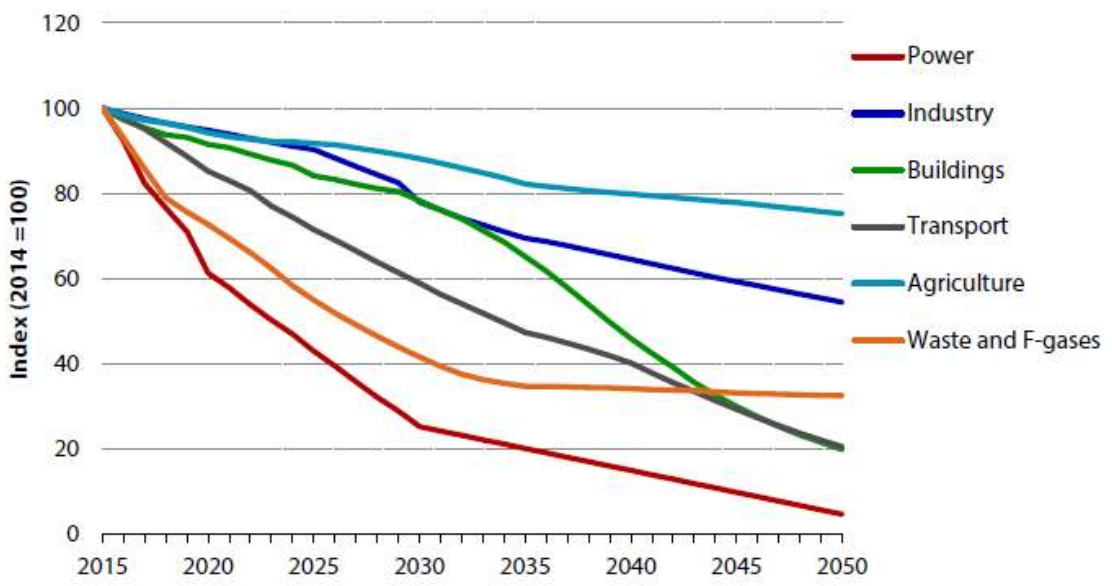
Approach to uncertainty: develop options, not wait-and-see

Key measures likely to be required



Although economy-wide progress should be fairly constant, we expect different sectors to progress at different rates

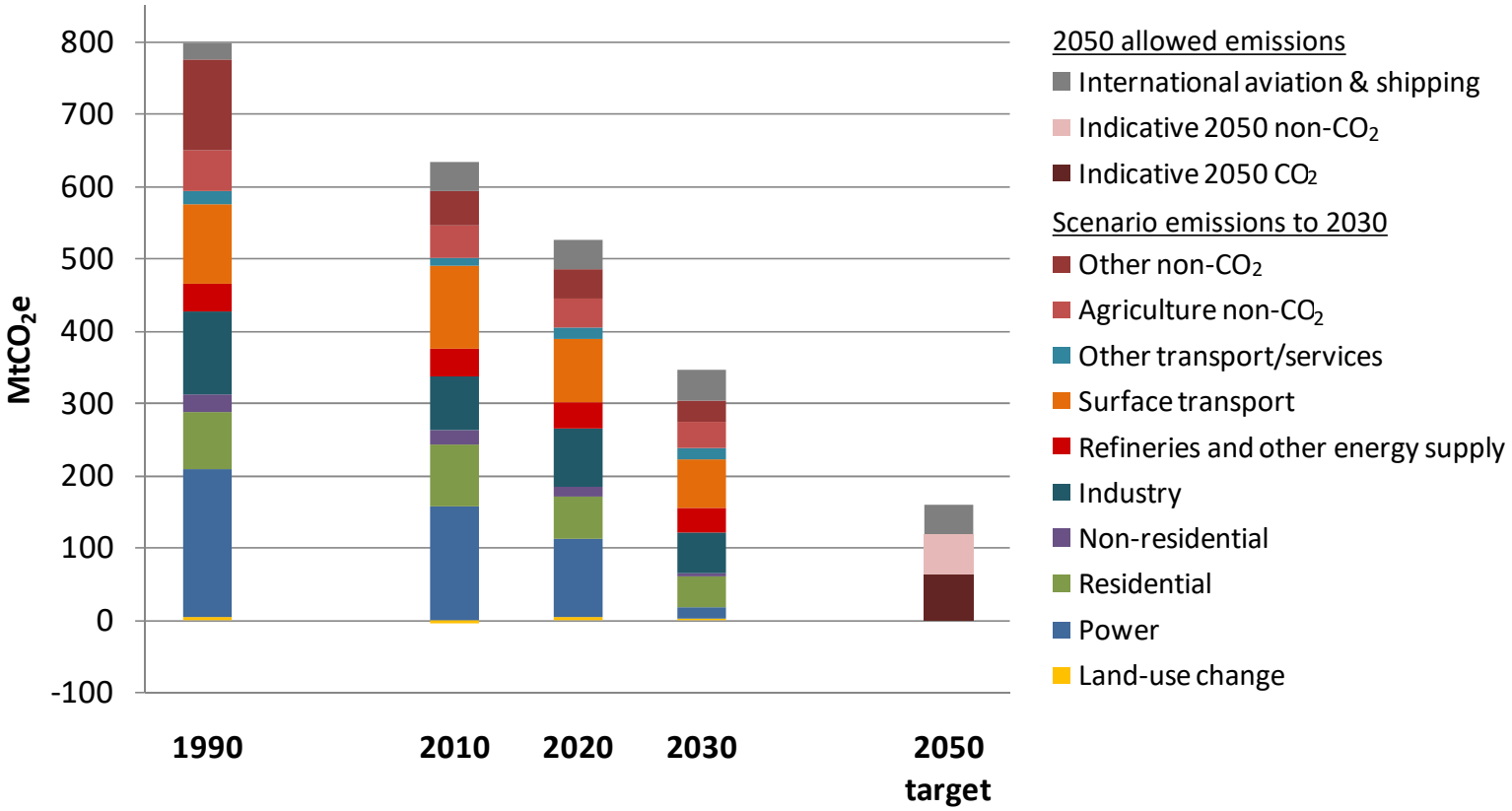
Figure 1.14: Central scenario emissions paths to 2050



Scenarios identify low-cost ways to cut emissions and key options that need development

Source: CCC (2015) The Fifth Carbon Budget

Budgets reflect a feasible and cost-effective scenario for 2030, on the path to 2050



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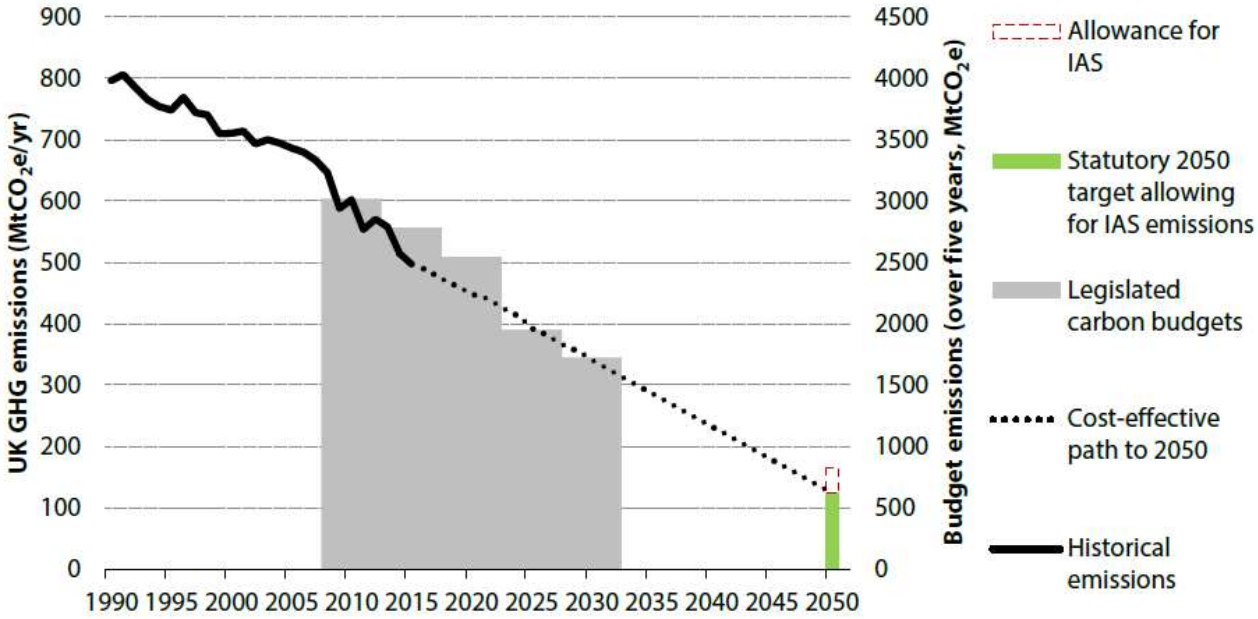
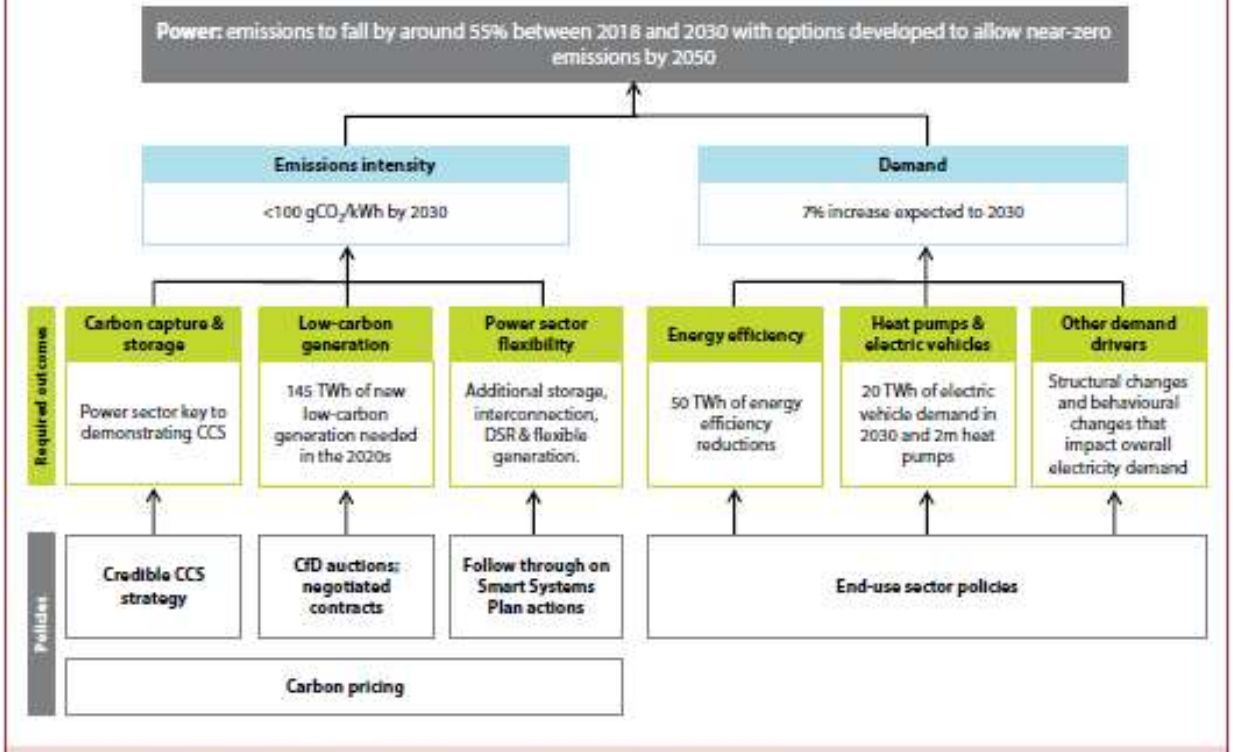


IAS = International aviation and shipping (not included in carbon budget accounting)

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

Pathways also give rich info for progress monitoring and policy support

Figure 2.5. CCC indicators for monitoring progress in the power sector to 2030



Notes: CfD = Contract-for-Difference; CCS = Carbon capture and storage.

Source: CCC (2018) Progress Report to Parliament

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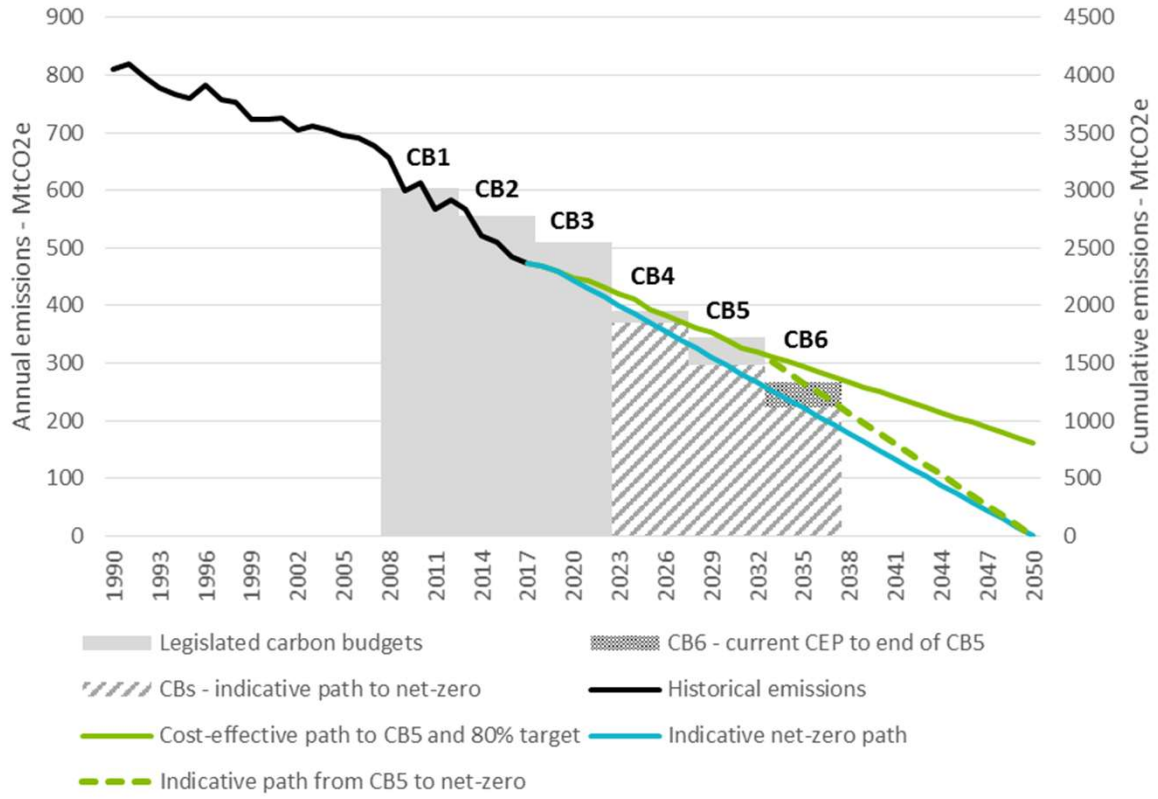
Epilogue: What's next

Next: The sixth carbon budget



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Reclaiming 2030

Net-zero Investment

Power (baseload)	2010-12?
New homes	2025
New cars*	2030-35
New boilers	2030-35?
Industry refurbs	2025-35?

Next 5-15 years are crucial

* + vans, motorcycles, buses and trucks

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Thank you!