



Committee on  
Climate Change

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

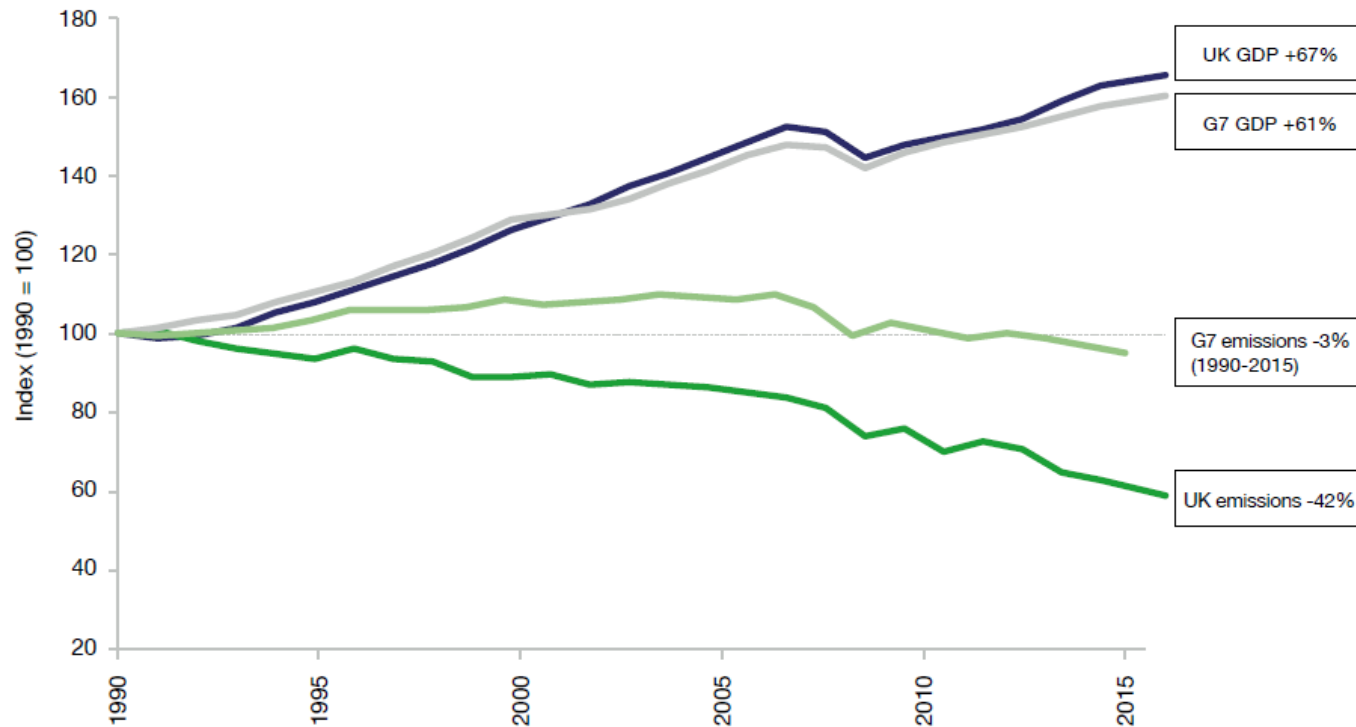
**August 2019**

# Taking climate change seriously – the UK story

Mike Thompson  
Head of Carbon Budgets, CCC

# Number 1 lesson from the UK: There's nothing to be afraid of!

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



# The UK response to climate change

Part 1: The UK Climate Change Act

Part 2: Net-zero ambition

Part 3: The UK story so far



Committee on  
Climate Change

# The UK response to climate change

August 2019

## Part 1: The UK Climate Change Act – locking into climate action (and throwing away the key)

Mike Thompson

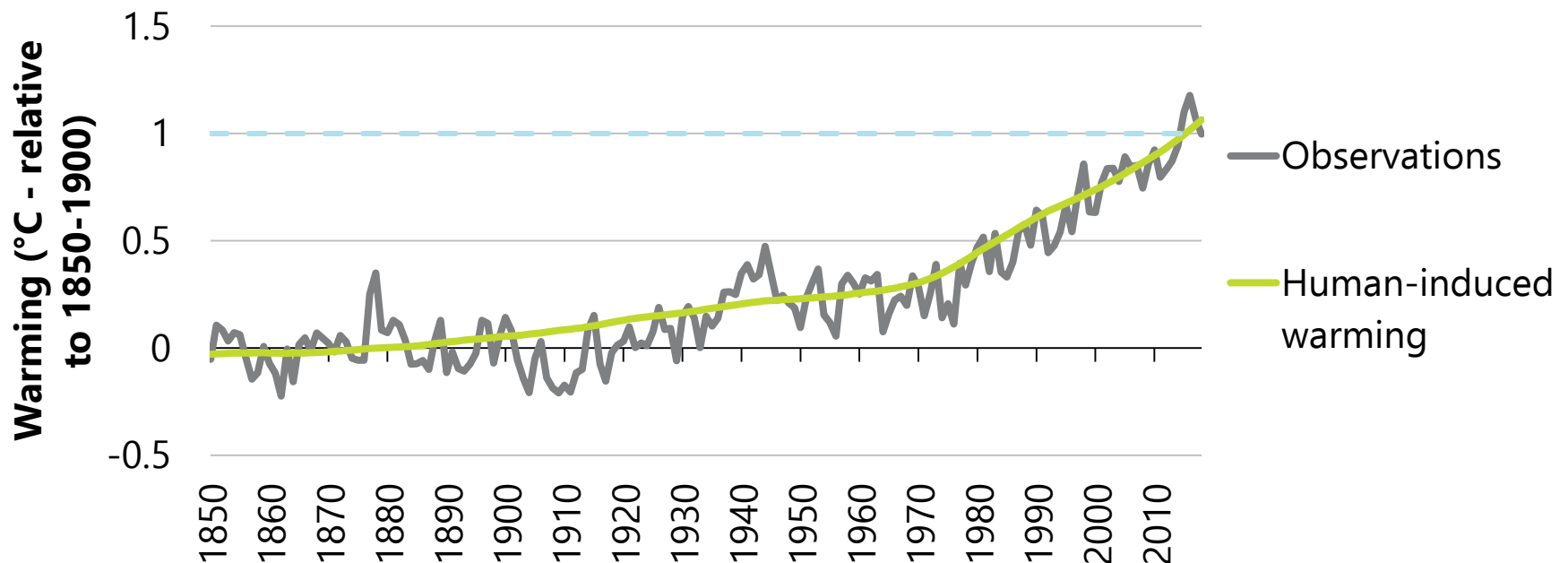
Head of Carbon Budgets, UK-CCC



Committee on  
Climate Change

# The world is warming due to human influence – we need to act

## Observed and human-induced warming



**Source:** HadCRUT4, NOAA, NASA and Cowtan & Way datasets; IPCC (2018) Chapter 1 - Framing and Context.



# The world has agreed to act to tackle climate change



**United Nations**  
Framework Convention on  
Climate Change



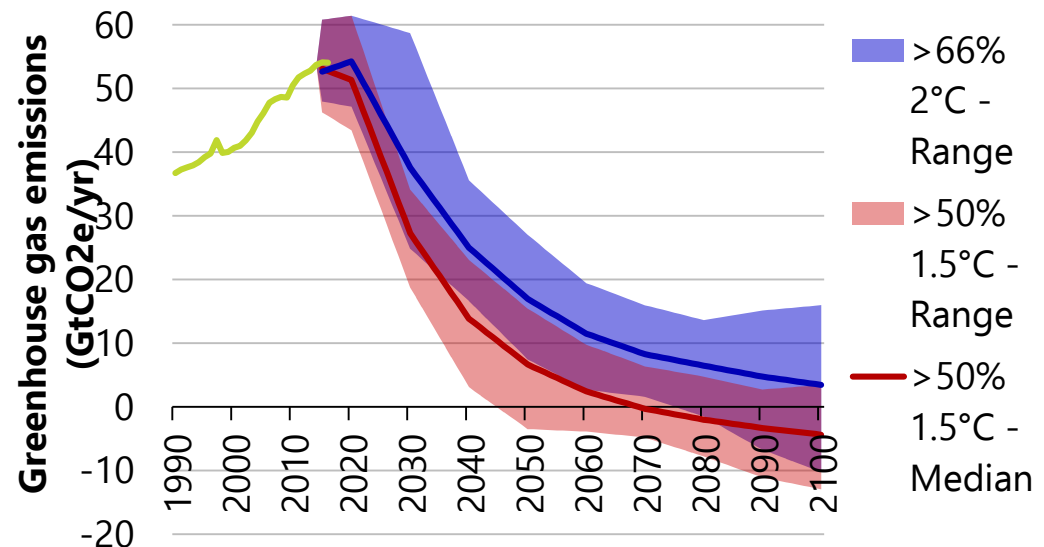
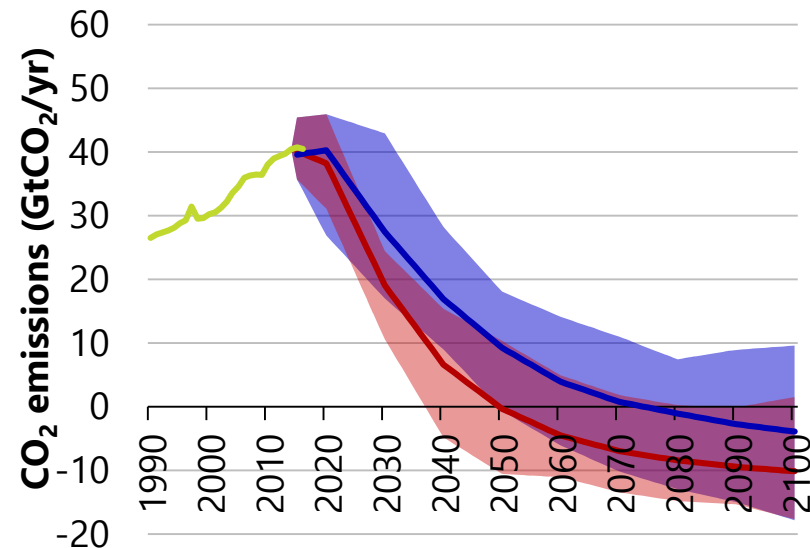
**PARIS2015**  
UN CLIMATE CHANGE CONFERENCE  
COP21·CMP11



Hold the increase in the global average temperature to **well below 2°C** above pre-industrial levels and pursue efforts to limit the temperature increase to **1.5°C**

# Radical cuts in emissions are needed to meet the Paris temperature goal

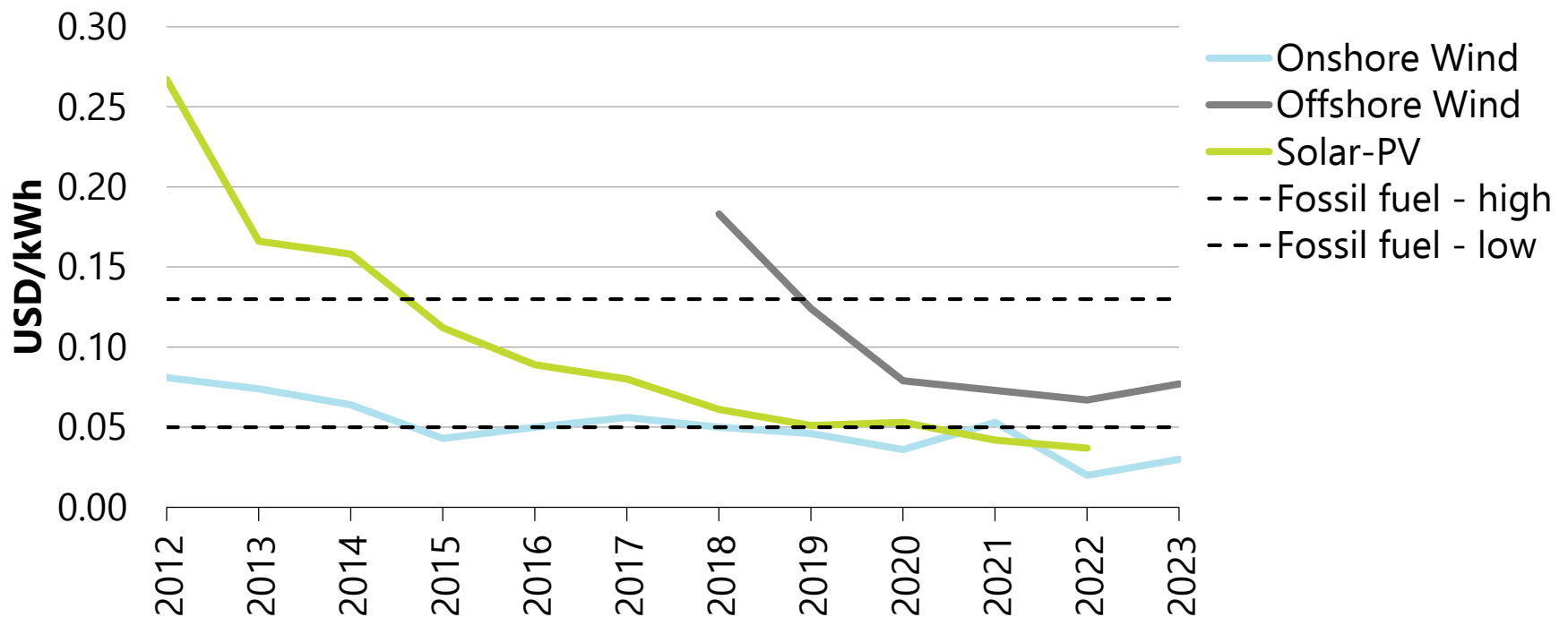
**Global emissions pathways consistent with Paris CO<sub>2</sub> (left) Aggregated GHGs (right)**



**Source:** Huppmann, D. et al. (2018) A new scenario resource for integrated 1.5°C research.

# Technology and economics are not barriers to global action – we can act

**Global average auction prices by commissioning date**





# Climate Change Act shifted focus in the UK – we will act

## Climate change

- Long-term
- Global
- Uncertain

***Whether*** to cut emissions?

## Carbon budgets

- Near-term
- Local
- Definite

***How*** to cut emissions?



Climate Change Act 2008

**& Adaptation**

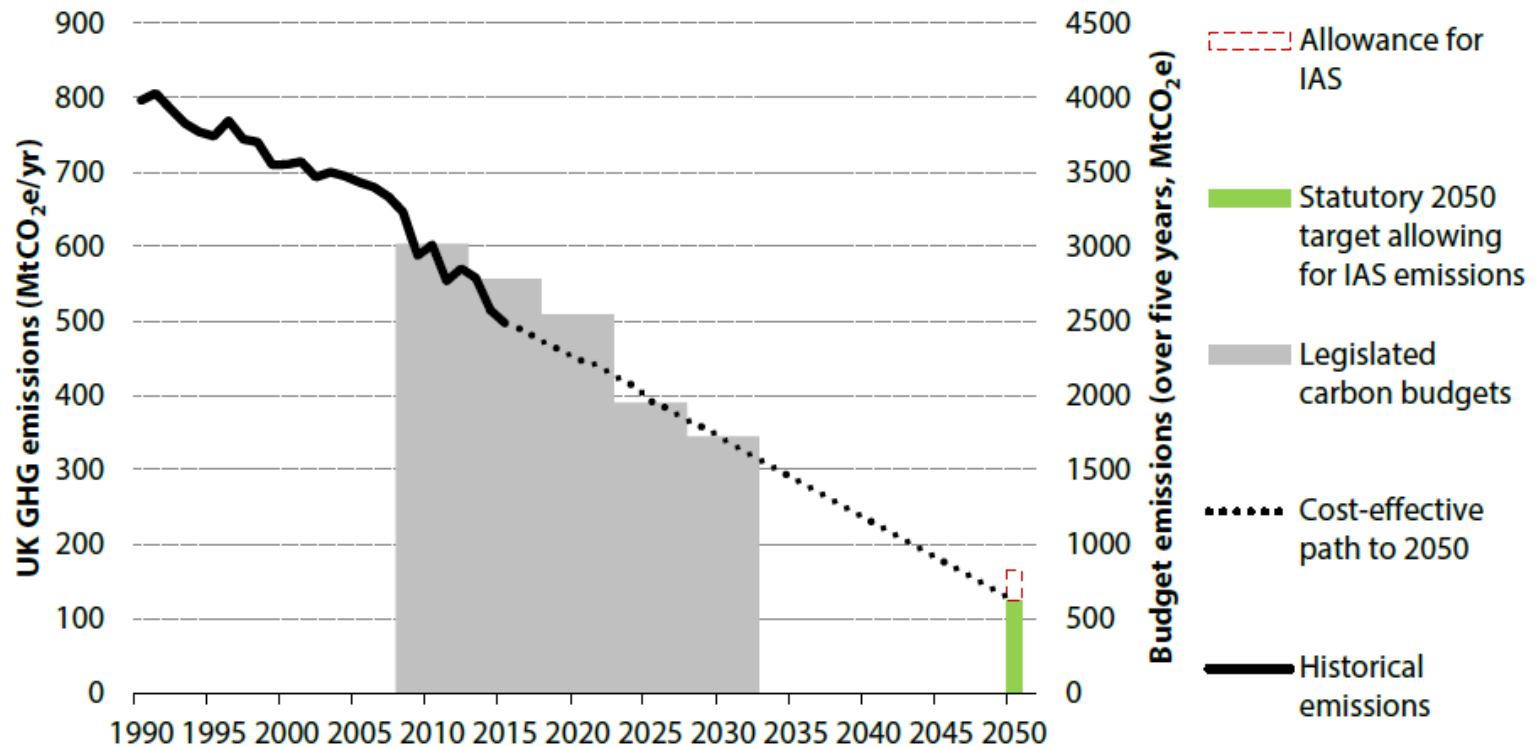


## The Climate Change Act 2008

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

# UK has 5 legislated carbon budgets that are stepping stones to the original 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]

# 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



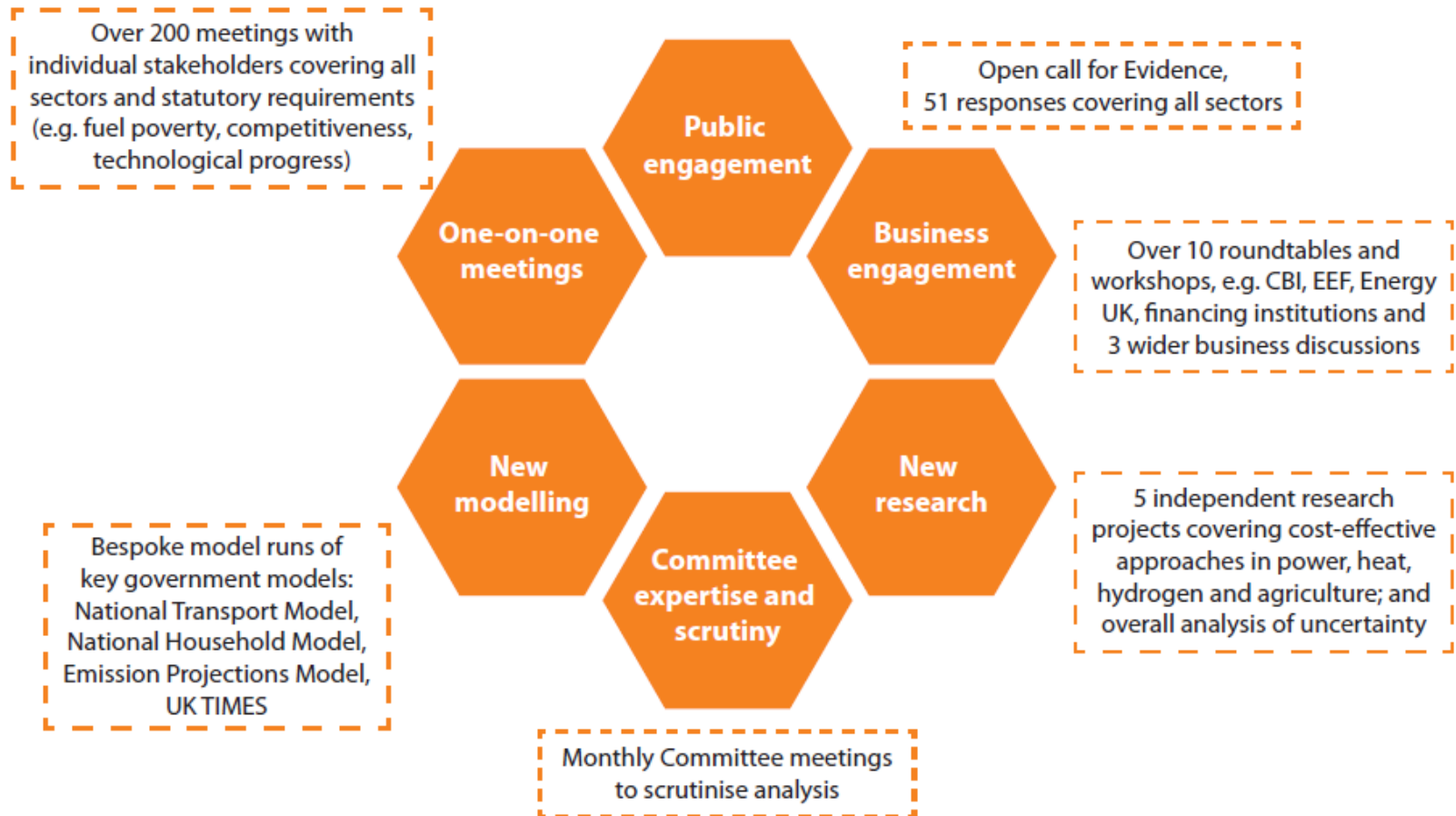
Paul  
Johnson



Professor  
Nick Chater

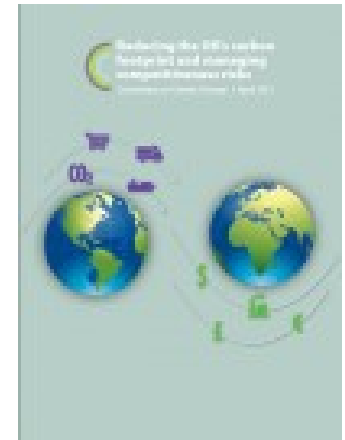
Supported by full-time secretariat of  
~20 analysts

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



# Extensive evidence base is transparent to all interested stakeholders (>70 reports since 2008!)

Building a low-carbon economy –  
the UK's contribution to tackling climate change





...leading to  
widespread  
business  
support.

Certainty,  
predictability  
&  
transparency  
highly valued.

# IT'S TIME

## TO BACK A VITAL PART OF THE UK'S ECONOMY

The Committee on Climate Change reiterated its advice today on how the UK's emissions of greenhouse gases need to be cut during the 2020s to comply cost-effectively with the long-term objectives of the Climate Change Act.

The Committee's recommendations show the minimum action that the UK should be taking to meet its obligations as part of a global effort to tackle climate change. If rapidly implemented and supported by stable policies, these recommendations should also make the UK a global leader in the low-carbon sector and create significant growth for the economy, including much needed new green jobs across the regions.

As a range of businesses, investors, faith groups and NGOs representing a wide spectrum of the UK economy and society, we jointly urge the Government to stick to ambitious emission reduction objectives for the 2020s to give business the certainty it needs to commit significant investments to the UK's promising low-carbon economy and in so doing, maintain our energy security.



# Other countries have adopted similar climate legislation

Mexico

Sweden

France

New Zealand

## **Conclusions from LSE-Grantham (2018) *10 Years of the UK Climate Change Act***

The experience of the UK's Climate Change Act since 2008 provides lessons for climate law-making that apply internationally:

- A comprehensive framework law is an essential tool to coordinate and advance climate action with respect to both reducing greenhouse gas emissions and climate resilience.
- A good climate law contains statutory targets, assigns clear duties and responsibilities and provides clarity about the long-term direction of travel.
- Economy-wide, multi-year targets, set well in advance, help to define a clear, yet flexible path towards the long-term climate objective.
- A strong independent body is critically important to ensure consistent policy delivery and evidence-based decision-making.

Source: <http://www.lse.ac.uk/GranthamInstitute/publication/10-years-climate-change-act/>



Questions?

# The UK response to climate change

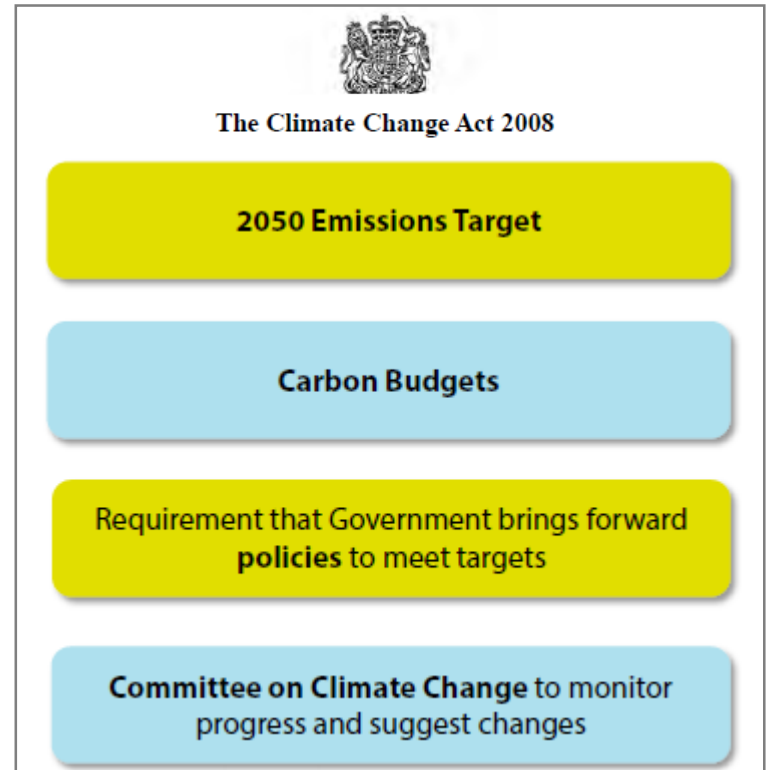
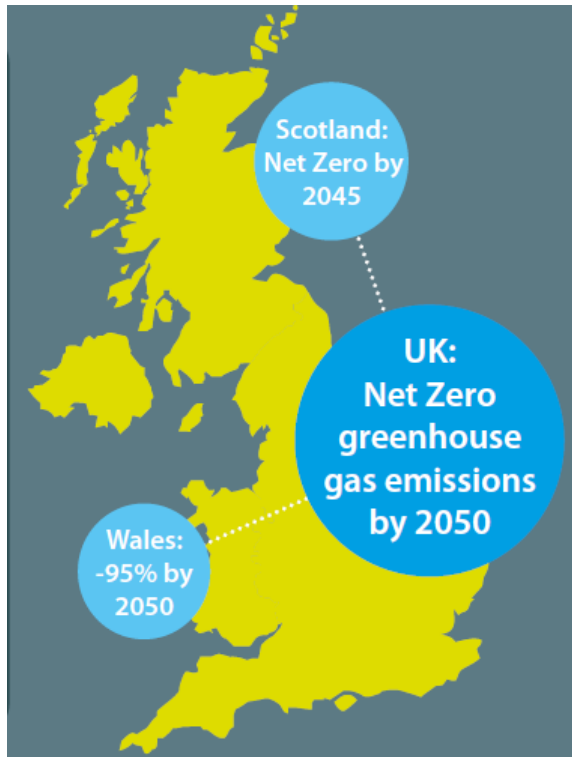
August 2019

## Part 2: Net Zero Ambition – Ending the UK's contribution to climate change



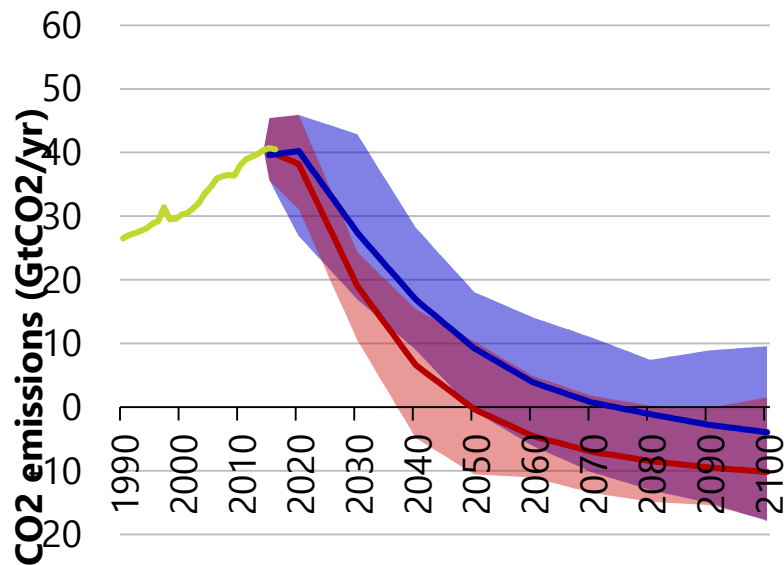
Mike Thompson  
Head of Carbon Budgets, UK-CCC

# The UK should legislate for 'net-zero' emissions by 2050



# An appropriate contribution to global action

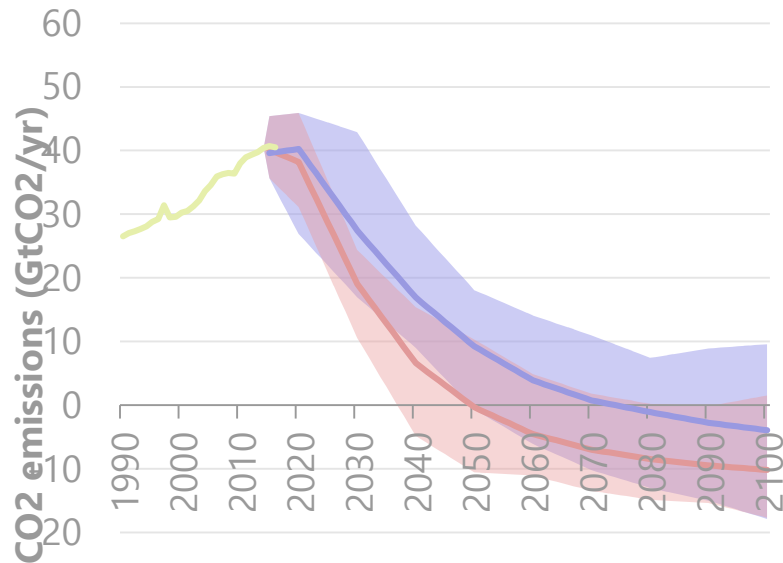
## Global emissions pathways consistent with Paris CO2



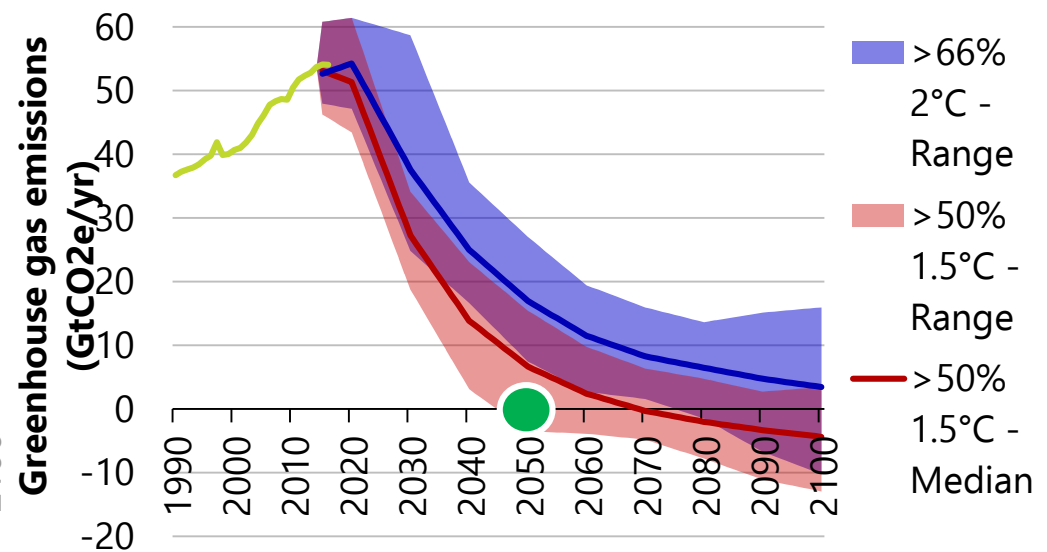
**Source:** Huppmann, D. et al. (2018) A new scenario resource for integrated 1.5°C research.

# An appropriate contribution to global action

Global emissions pathways consistent with Paris CO<sub>2</sub>



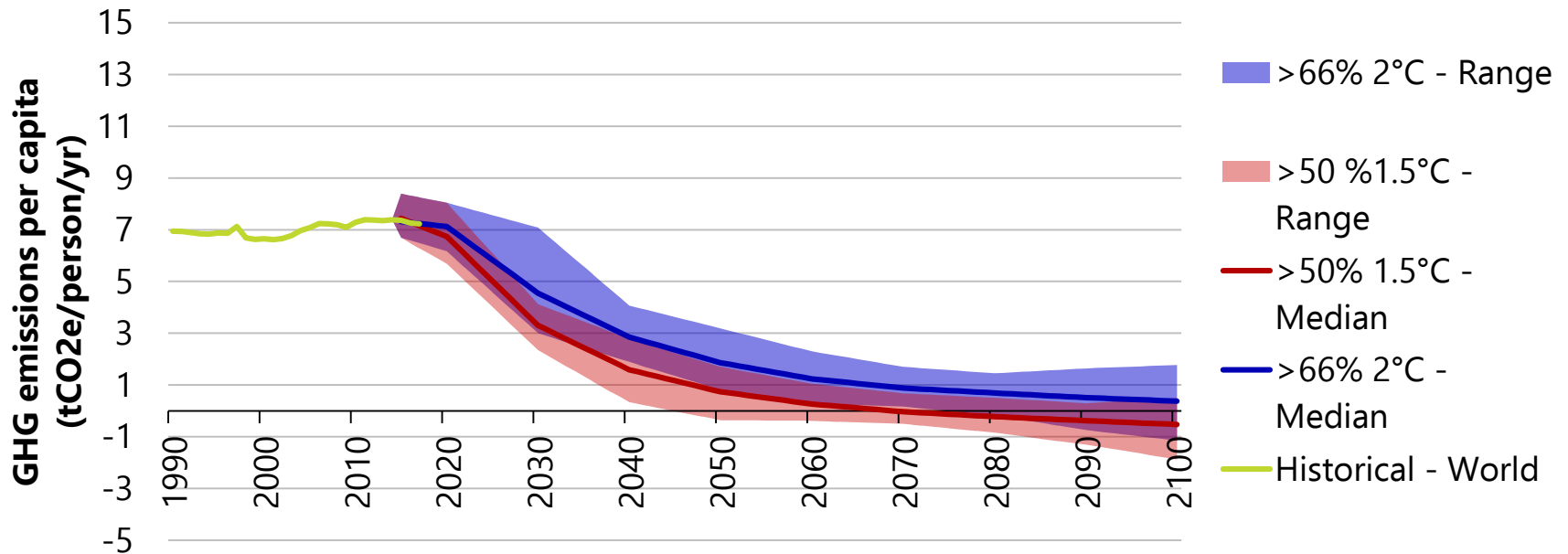
Global emissions pathways consistent with Paris Aggregated GHGs (right)



**Source:** Huppmann, D. et al. (2018) A new scenario resource for integrated 1.5°C research.

# The UK as an example of what can be done

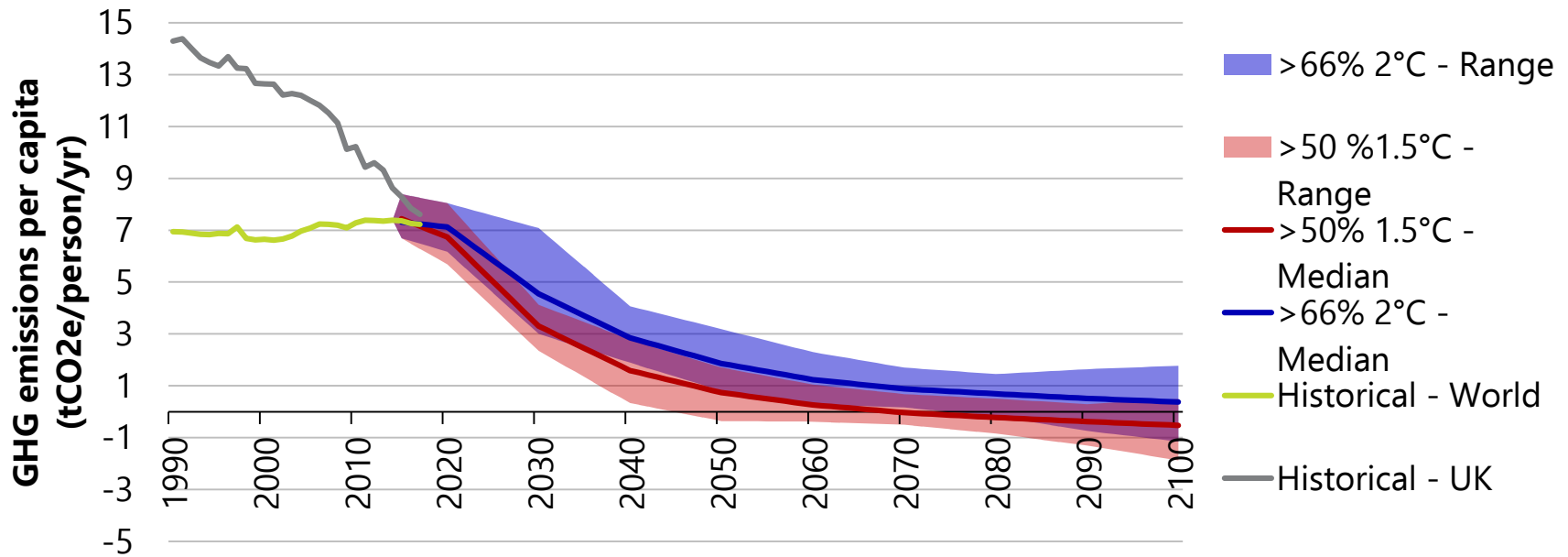
## Evolution of global per capita emissions over time



**Source:** Huppmann, D. et al. (2018) A new scenario resource for integrated 1.5°C research.

# The UK as an example of what can be done

## Evolution of global per capita emissions over time



**Source:** Huppmann, D. et al. (2018) A new scenario resource for integrated 1.5°C research.

# UK is not alone in setting a net-zero target

## Net-zero targets already adopted

UK, France, Sweden	2050 (Sweden 2045), all GHGs, in law
Denmark, Norway, California	2030-2050, CO <sub>2</sub> / GHGs,

## Net zero targets being considered

European Union	2050, all GHGs
New Zealand	2050, all long-lived GHGs

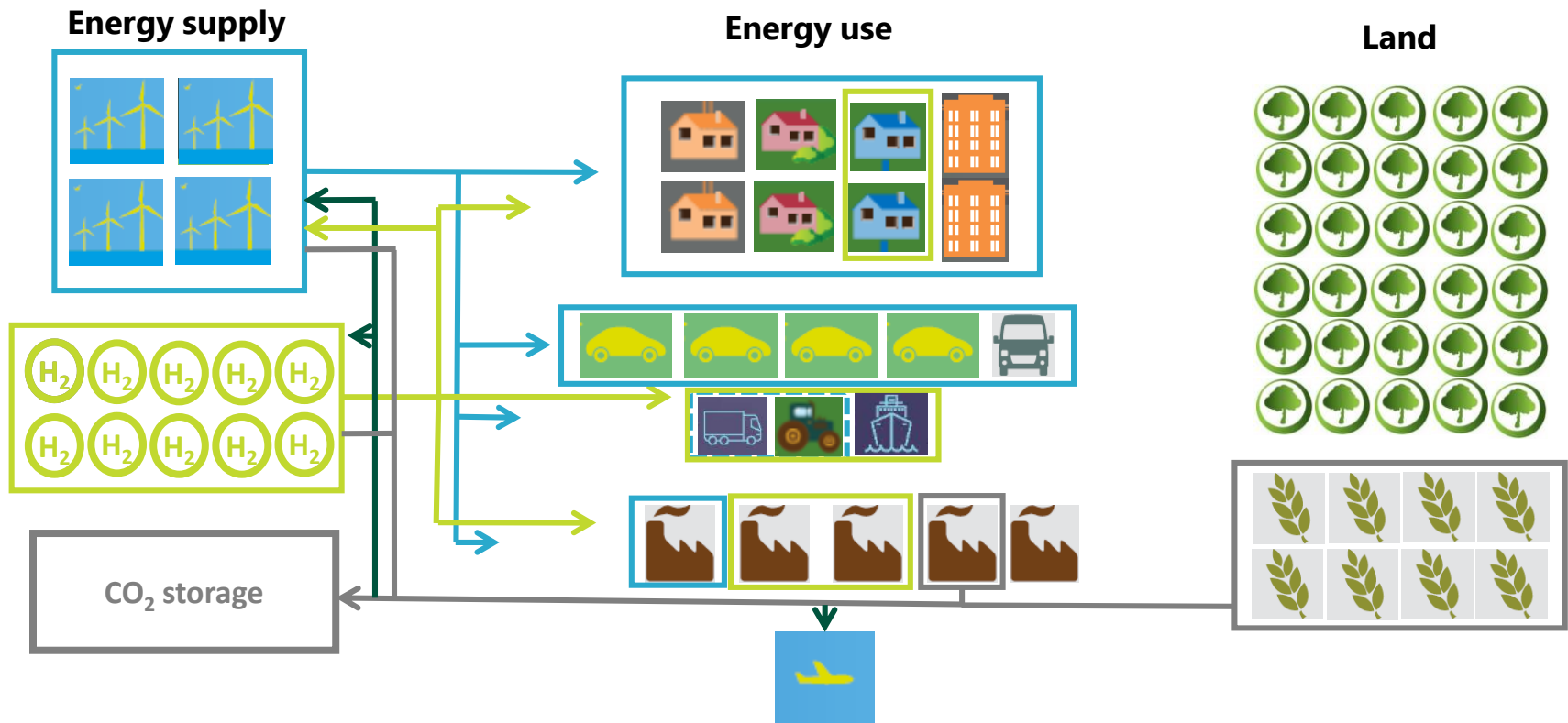
## Softer net-zero targets (strategies, NDCs, etc)

A number of other countries have mid-century or earlier net-zero targets and ambitions: Ethiopia, Costa Rica, Bhutan, Fiji, Iceland, the Marshall Islands, and Portugal.



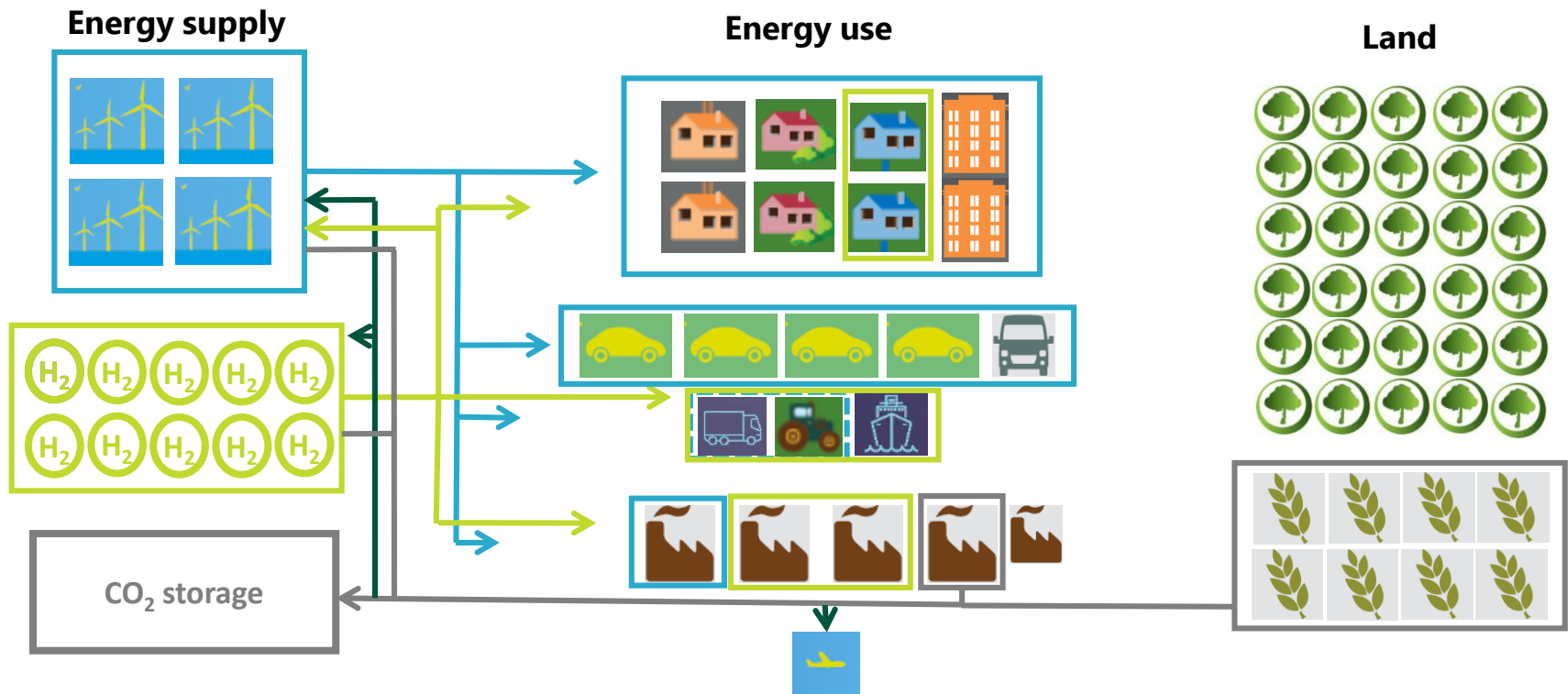
# Reaching net-zero emissions in the UK

## How UK net-zero scenarios can be delivered



# Reaching net-zero emissions in the UK

## How UK net-zero scenarios can be delivered



Questions?

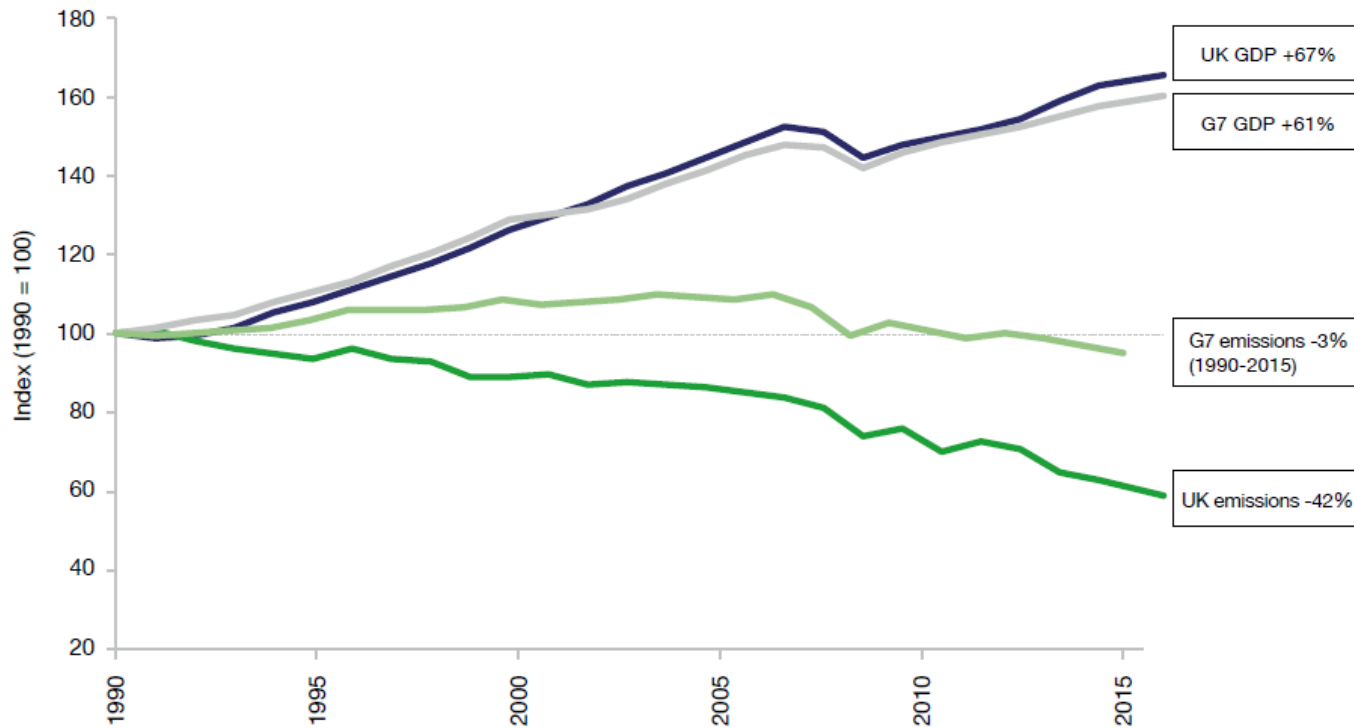
**August 2019**

# **Part 3:** The UK story so far – nothing to be afraid of!

Mike Thompson  
Head of Carbon Budgets, CCC

# The UK has grown the economy while cutting emissions

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



Once set, targets have been followed by innovation – at worst, costs likely to be low

**More effort**

2050 target (v 1990)	Estimated cost
Now: -100% GHG	1-2% of GDP
2008: -80% GHG	1-2% of GDP
2003: -60% CO <sub>2</sub>	0.5-2.0% of GDP

**Same cost**



**Co-benefits**



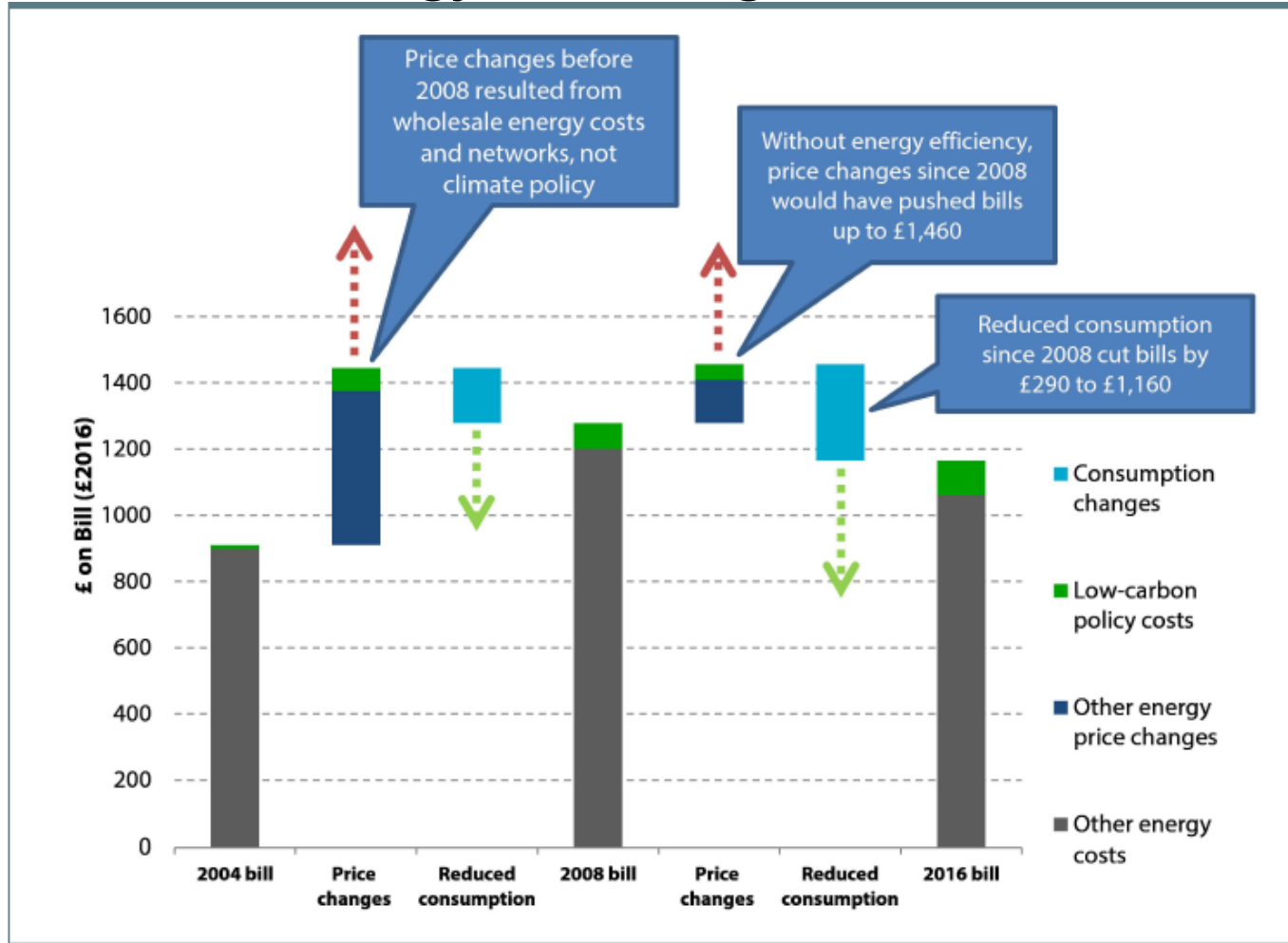
**Clean Growth**



**Innovation**

# Energy efficiency savings have more than offset increased costs from climate policies

## UK Annual Energy Bills (changes 2004 – 2008 – 2016)



# Carbon budgets do not stop other Government objectives being achieved



- Power scenarios maintain security of supply
- Economy-wide scenarios cut oil and gas imports by 40%



- Direct emissions reductions in industry are initially low cost
- Compensation/Exemptions planned or in place for impacts via electricity prices and EU ETS



- Will need some tax rate/band adjustments to maintain revenues



- Improved health and environment, e.g. AQ, noise
- Worth 0.1-0.6% GDP at Govt appraisal values in 2030



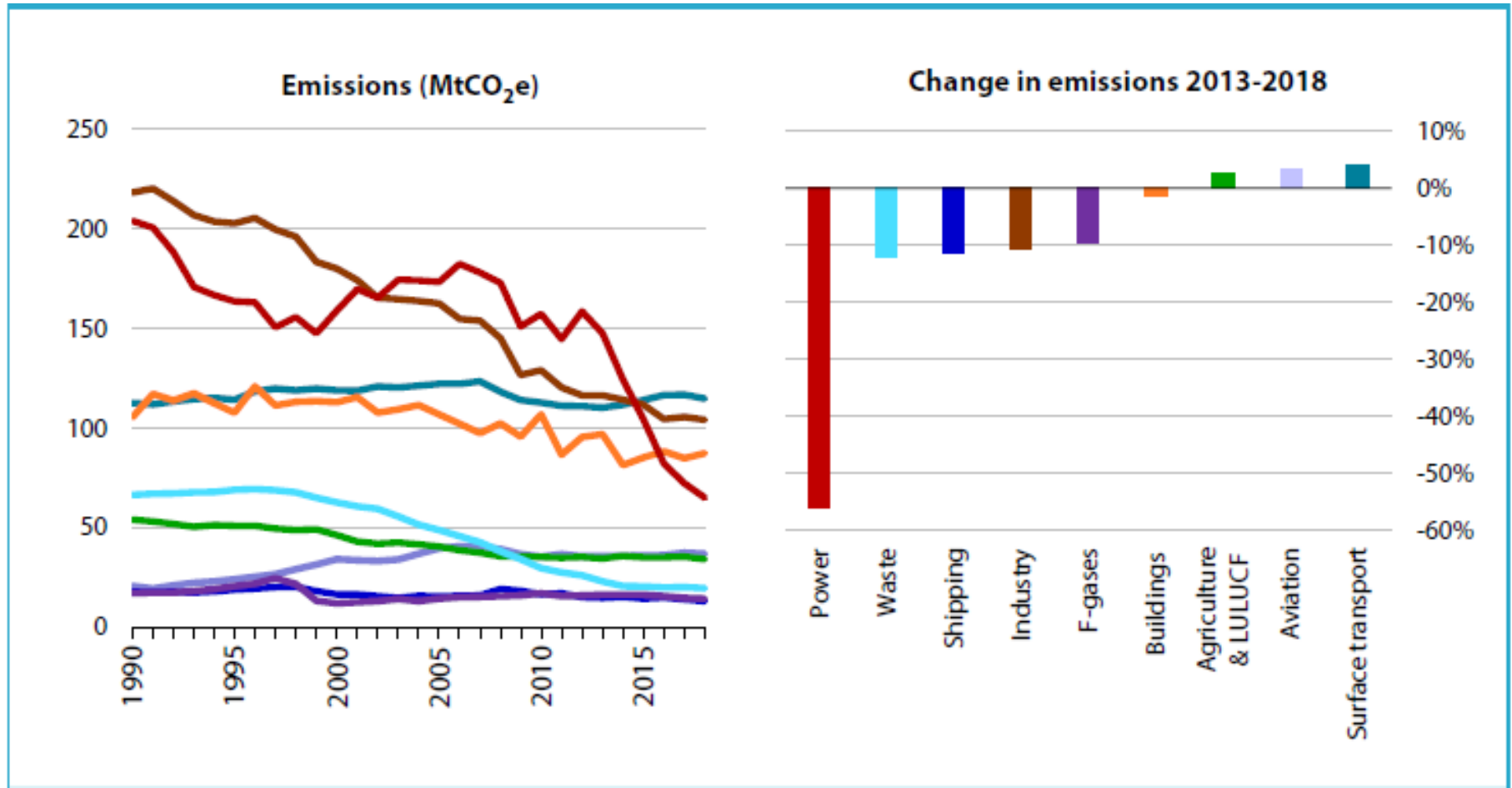
# Policies have been introduced across the economy

*“if you believe in markets you have to believe in market failures”*

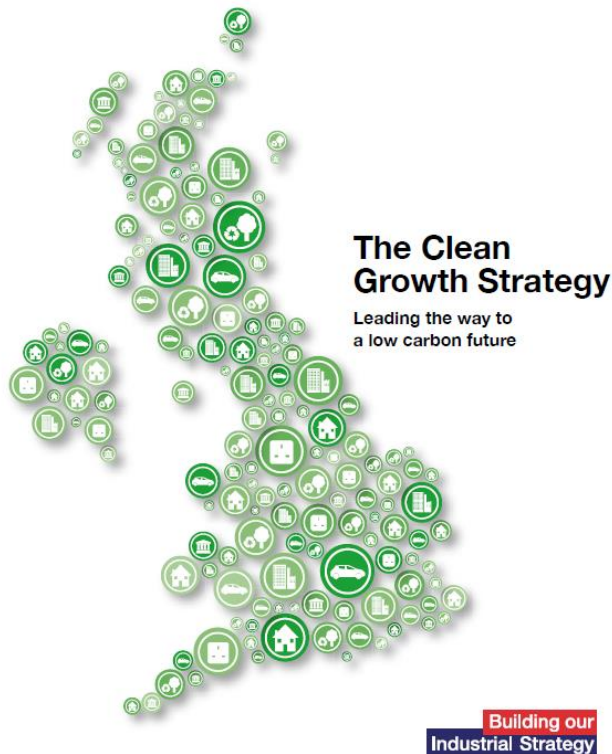
Reduce emissions	Break down barriers	Avoid lock-in	Prepare for the future
EU ETS cap and UK carbon price floor	EU car efficiency standards	No new coal without CCS	Renewables support
New market for low-carbon generation	Products standards	Zero-Carbon homes	CCS demonstration
Landfill tax	‘Green Deal’ finance		Funding for Electric Vehicles
Various energy taxes and levies	Landlord obligations		Renewable Heat Incentive

# However, progress to date is imbalanced

## UK Greenhouse gas emissions (1990 – 2018)



# The UK Government plan to meet carbon budgets: 'Clean Growth Strategy'



- This sets out the Government's plan for meeting the legislated carbon budgets
- "Clean growth is at the centre of our modern industrial strategy" – PM May
- It includes 50 key policies and proposals the Government intend to implement across the economy
- But more will be needed to deliver the fourth and fifth carbon budget

# Policy: The lesson of the last 10 years

## The power sector story

1

Set a clear objective  
(e.g. 2020 renewables targets)

2

Get the right policy design – and stick to it! (e.g. auctioning renewable contracts, carbon price, product standards)

3

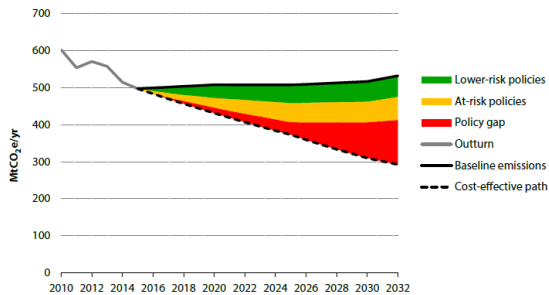
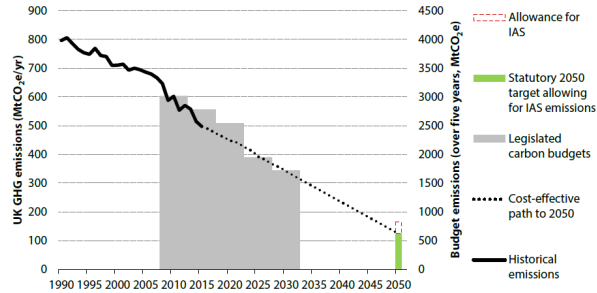
Provide commitment & funding  
(e.g. support for offshore wind and coal closure)

## Some closing observations

- Government policies needed to drive change from businesses and consumers
- Legislative framework should aim to reduce policy risk
- Need to balance certainty with flexibility
- Transparent approach based on analysis and evidence key to CCC success
- Effective policy tackles multiple market failures; needs regular review and updating

# What's next? A big year in 2020!

A new pathway to the net-zero target



Policies to meet the targets

Successful UN climate talks



# Thank you!

[www.theccc.org.uk](http://www.theccc.org.uk) |  @theCCCuK @Mike\_Thommo