



Green Growth and LCS

First Annual Meeting of LCS.RNet

CMCC

Bologna

12 October 2009

Jim Skea

UK Energy Research Centre

UKERC

Outline

1. Green growth and LCS: the UK approach
2. The transition to a low carbon society: UK strategy
3. The impact of the banking crisis

Green growth and LCS: the UK approach

Commission on
Environmental
Markets and
Economic
Performance

Report

November 2007

BERR
Department for Business
Enterprise & Regulatory Reform



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Doing business in a low carbon society

- “Traditional” environmental markets
 - \$550bn in 2004; \$700m in 2010?
- Low carbon supply technologies
 - \$100bn in 2007; \$0.5-3.0 trillion in 2050?
- Low carbon in buildings and transport
 - Diffuse and perhaps unquantifiable

Public policy measures

- Leading role for government
- Environmental policy
 - Pricing carbon
 - Targeted regulation
 - Removing commercialisation barriers
- Innovation Policy: Market 'Pull'
 - Support the deployment of emerging technologies
 - Create "lead markets"
- Innovation Policy: Supply 'Push'
 - Technologies – RD&D
 - Skills
 - linking RD&D support to procurement opportunities
- Co-ordination of integrated policy packages

Policy design

- applies over a timescale that counts: not too short or too long
- is clear and unambiguous and gives confidence that the policy direction will be maintained
- is credible, which generally means legally enforceable and likely to achieve the desired objective
- building a durable national consensus on goals to help reduce risk, increase credibility and provide protection against future revision
- 'Credible' + 'consensus' ≠ 'unambitious'

Examples of application

- empower local area partnerships
- sectoral deployment support to help build scale and reduce unit costs for emerging environmental technologies
- 'dynamic' performance standards, which are progressively updated to take account of developments in the market
- value the future benefits of innovation in policy appraisal

Business

- addressing the environmental impacts of products throughout their whole life cycle
- investigating the scope for 'closed-loop' production, where recycled materials become the feedstock for new products
- re-engineering processes to cut costs and environmental impacts
- re-designing goods, incorporating environmental factors from the start
- reducing resource consumption by selling added-value services rather than more products

Investors

- availability of reliable information about companies' environmental impacts
- standardised protocols for carbon reporting
- formal environmental reporting requirements

The Aldersgate Group aims to raise awareness of the wide-ranging (economic and social) benefits of high environmental standards

1. Our long-term economic success depends on a healthy environment and the sustainable use of natural resources.
2. At the company level, good environmental performance translates to tangible economic benefits and is a major source of competitive advantage.
3. Better environmental regulation creates new business and employment opportunities in a fiercely competitive global marketplace.
4. Policy appraisals must accurately assess environmental costs and benefits.
5. The better regulation agenda must not lose sight of the need to maximise outcomes in the drive to reduce unnecessary costs.

LCS transition: the UK strategy

1. Long-term carbon targets and mid-term carbon “budgets”
2. The Low Carbon Transition Plan
3. The Low Carbon Industrial Strategy

UK Climate Change Act

Climate Change Act

- Sets a legally binding target for emissions in 2050
- Creates a greenhouse gas budgeting system, capping emissions over 5-year periods starting 2008
- Creates an independent Committee on Climate Change
- Initiates a programme for looking at adaptation
- Became law on 26th November 2008

Issues debated in Parliament

- The ambition of the 2050 target (60% v 80%)
- The length of the budget periods
- The inclusion or otherwise of aviation and shipping
- The powers and make-up of the Committee

The Climate Change Bill passed in the House of Commons by 463 votes to 4.

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



Committee on Climate Change
December 2008

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Pathways to a Low Carbon Economy: Energy Systems Modelling

UKERC Energy 2050 Research Report 1

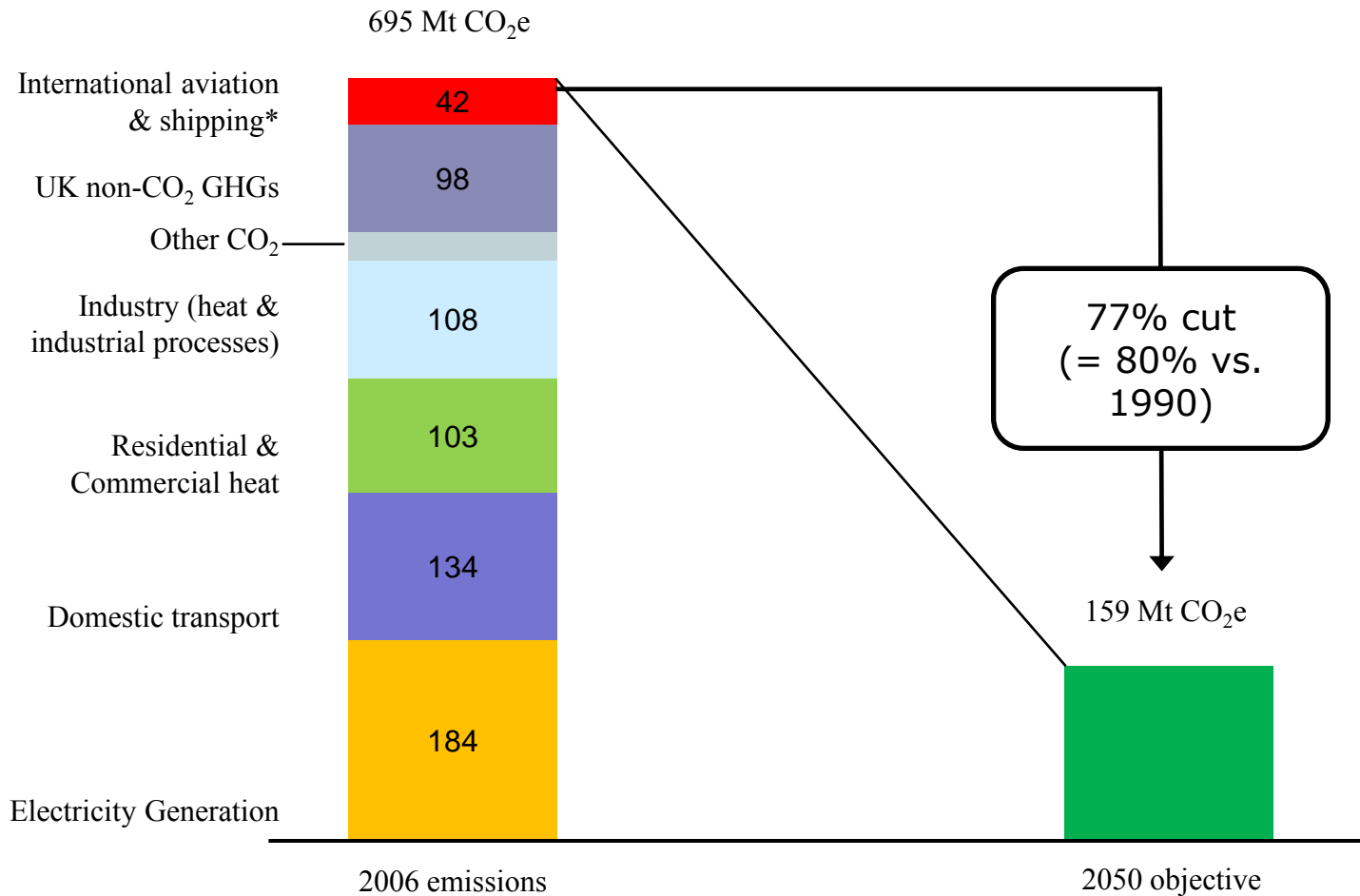
March 2009: UKERC/RR/ESM/2009/001

Gabrial Anandarajah, Neil Strachan, Paul Ekins, Ramachandran Kannan, Nick Hughes
King's College London

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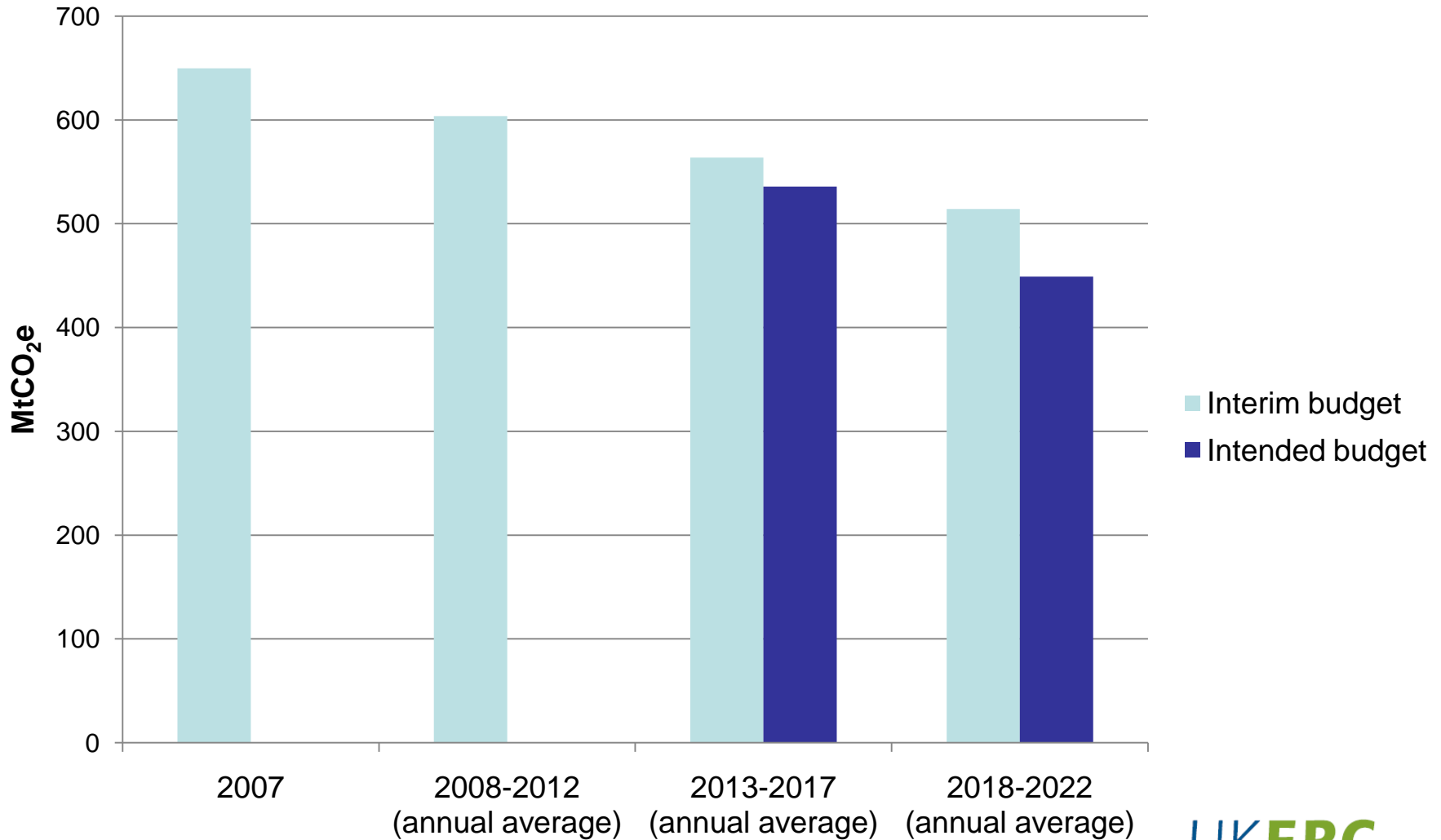


The scale of the challenge



* bunker fuels basis

Level of budgets: emissions ceilings



Meeting required reductions

Reducing power sector emissions:

Renewables (Wind, solar, tidal and marine, biomass), nuclear, CCS

Application of
power to transport
and heat

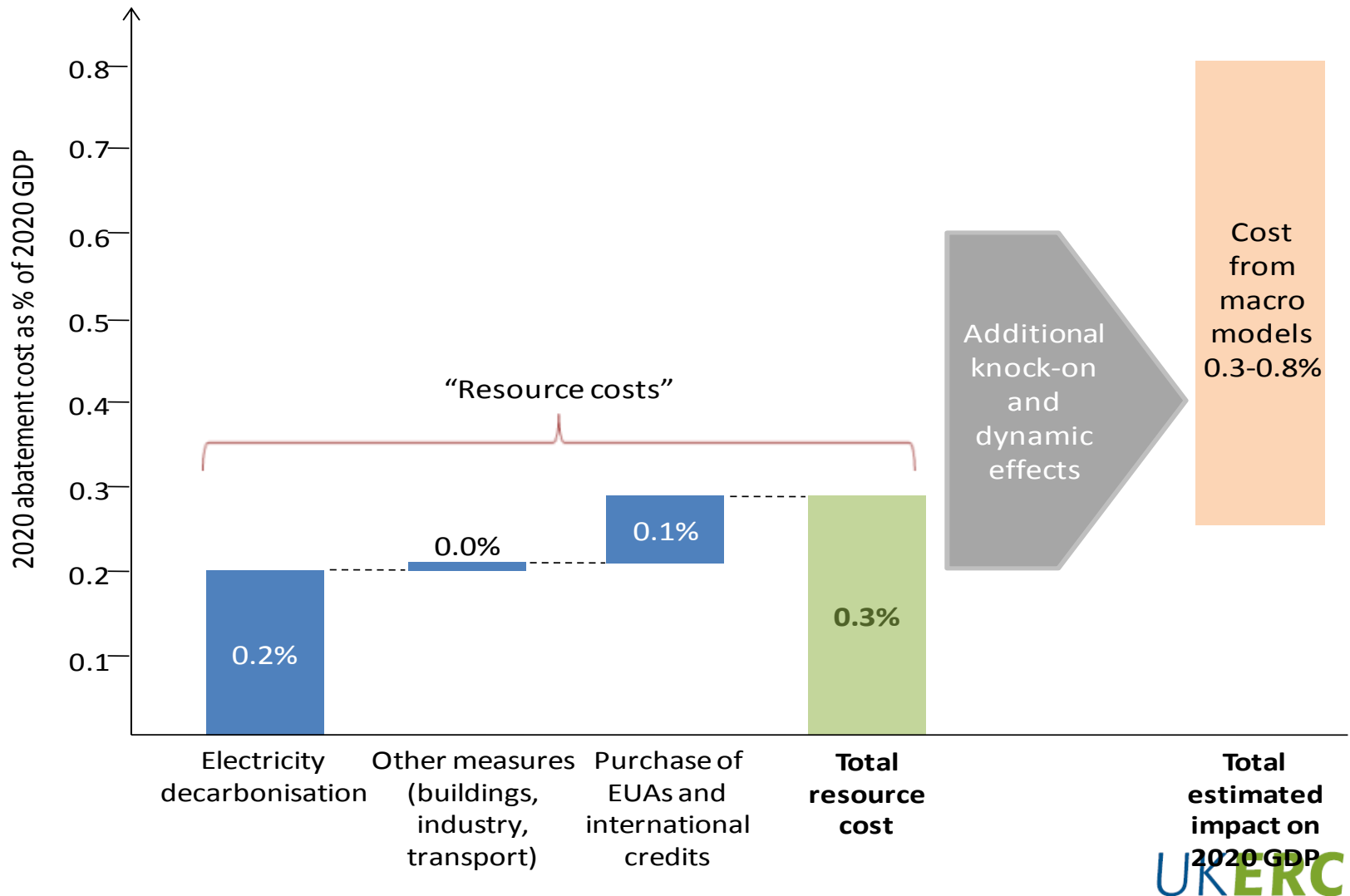
Reducing transport emissions:

- Fuel efficiency
- Electric/plug-in hybrids
- Sustainable Bio fuels

Reducing heat emissions:

- Energy efficiency
- Behaviour change
- Electric heat (e.g. heat pumps, storage heating)
- Biomass boilers
- CCS in industry

Resource cost of meeting the interim budget



The UK Low Carbon Transition Plan

National strategy for climate and energy



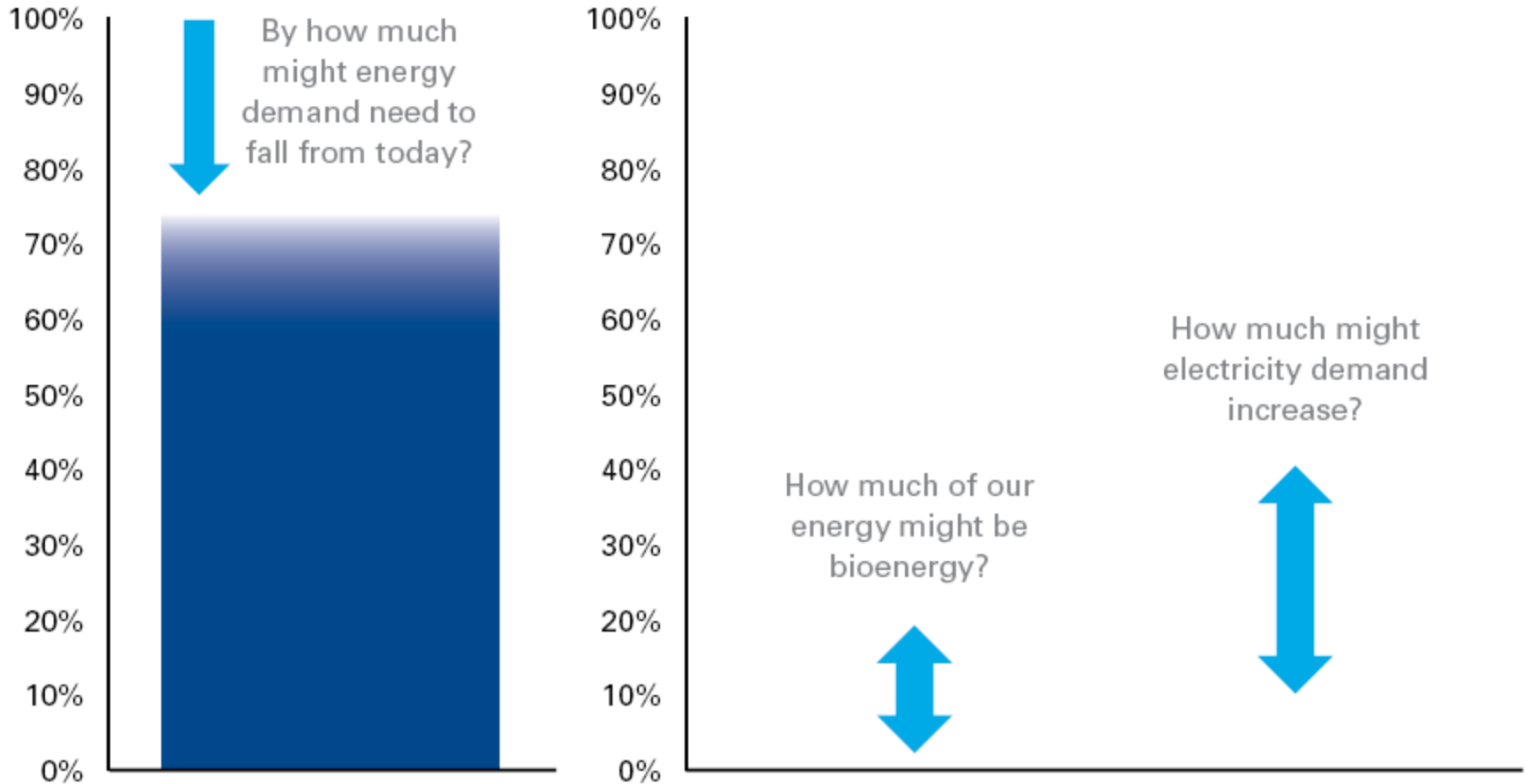
The Low Carbon Transition Plan (1)

- Responsibility for carbon budgets allocated round government departments
- Getting 40% of electricity from low carbon sources by 2020
 - Enhanced renewables obligation/
 - up to 4 CCS demonstrations at scale
 - nuclear new build
- Making homes greener
 - An extra £3.2bn for energy efficiency by 2012
 - New “pay as you save”/clean energy cash-back schemes
 - Whole house/whole street approaches

The Low Carbon Transition Plan (2)

- Helping make the UK a centre of green industry
 - £120m for offshore wind
 - £60m for marine renewables
- Transforming transport by
 - cutting average CO₂ emissions from new cars by 40% from 2007 levels
 - Large electric vehicle demonstration project
- Producing a long-term roadmap for 2020 - 2050

The roadmap: a range of scenarios for 2050



+ technology paths, residual emissions

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HM Government

Department for Business, Innovation and Skills
Department of Energy and Climate Change



The UK Low Carbon Industrial Strategy



Building  Britain's Future

Industrial strategy: growing innovative low carbon businesses

- Increased support for the early stages of innovation
- Closing the financing gap for growing low carbon companies
- Business advice for low carbon innovators
- Supporting low carbon innovation through procurement policy
- Strengthening the innovation infrastructure
- Foreign markets and investment as a driver of low carbon innovation and growth
- A coordinated approach to government support for low carbon innovation

Industrial strategy: a low carbon transition for the whole economy

- Capturing the benefits of resource efficiency
- Transforming Britain's infrastructure
- Equipping Britain with low carbon skills
- Driving demand for low carbon products

The impact of the banking crisis (1)

- baseline emissions will fall, reducing the effort needed to meet carbon budgets
- the decline in industrial output and energy demand has resulted in a low carbon price and low expectations of future prices
- if sustained this will undermine incentives for investment in low carbon power generation and a reduction of emissions from energy intensive industry.

The impact of the banking crisis (2)

- the fiscal response to declining GDP provides an opportunity to finance low carbon measures such as energy efficiency improvement.
- securing finance for required investments in renewable electricity generation will become more challenging in the credit crunch
- project finance hit more badly than corporate finance



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