

Approaches to transition in political discourse

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RENTTRANS workshop, Oslo,
September 2011

The UK Prime Minister

*We need to make
the transition to a
low carbon
economy
urgently*

David Cameron

January 2010

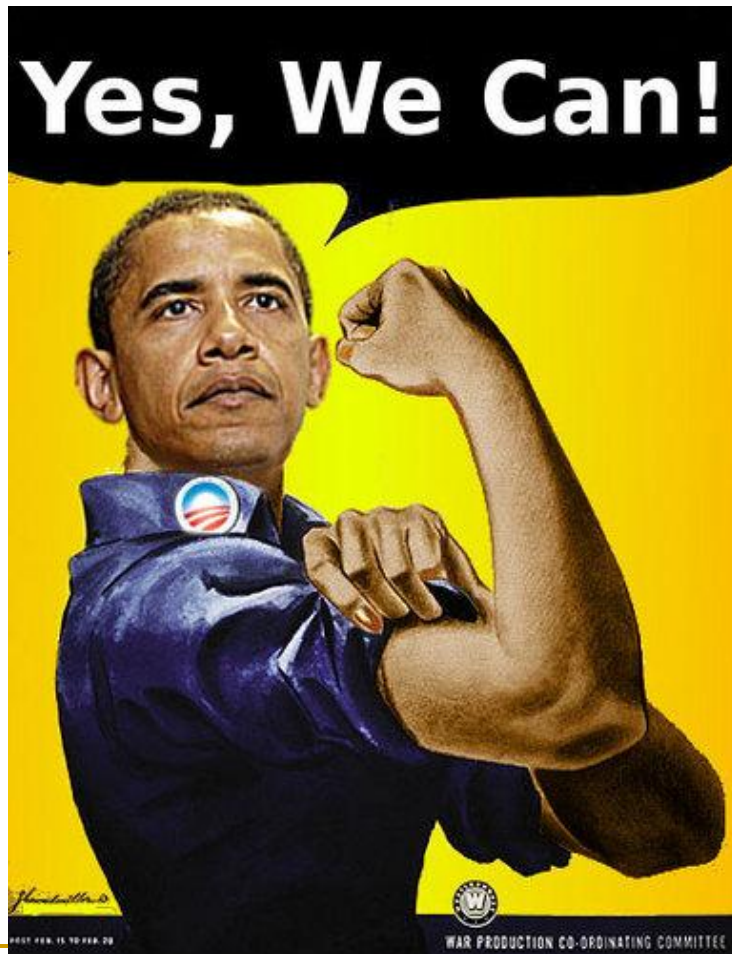


European Union



- we will take a historic step towards ...the transition to a low-carbon world economy.
- Manuel Barroso
- December 2007

‘the transition to a green and low-carbon economy is essential’ (Nov 2009)



chine-nouvelle.com

A shift in policy discourse

- A shared acknowledgement that addressing sustainability implies radical change
 - New policy narratives from margin to mainstream in the last 10 years
 - ‘Green revolution
 - ‘Ecological transformation’
 - ‘Low carbon transition’
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Not simply at the rhetorical level

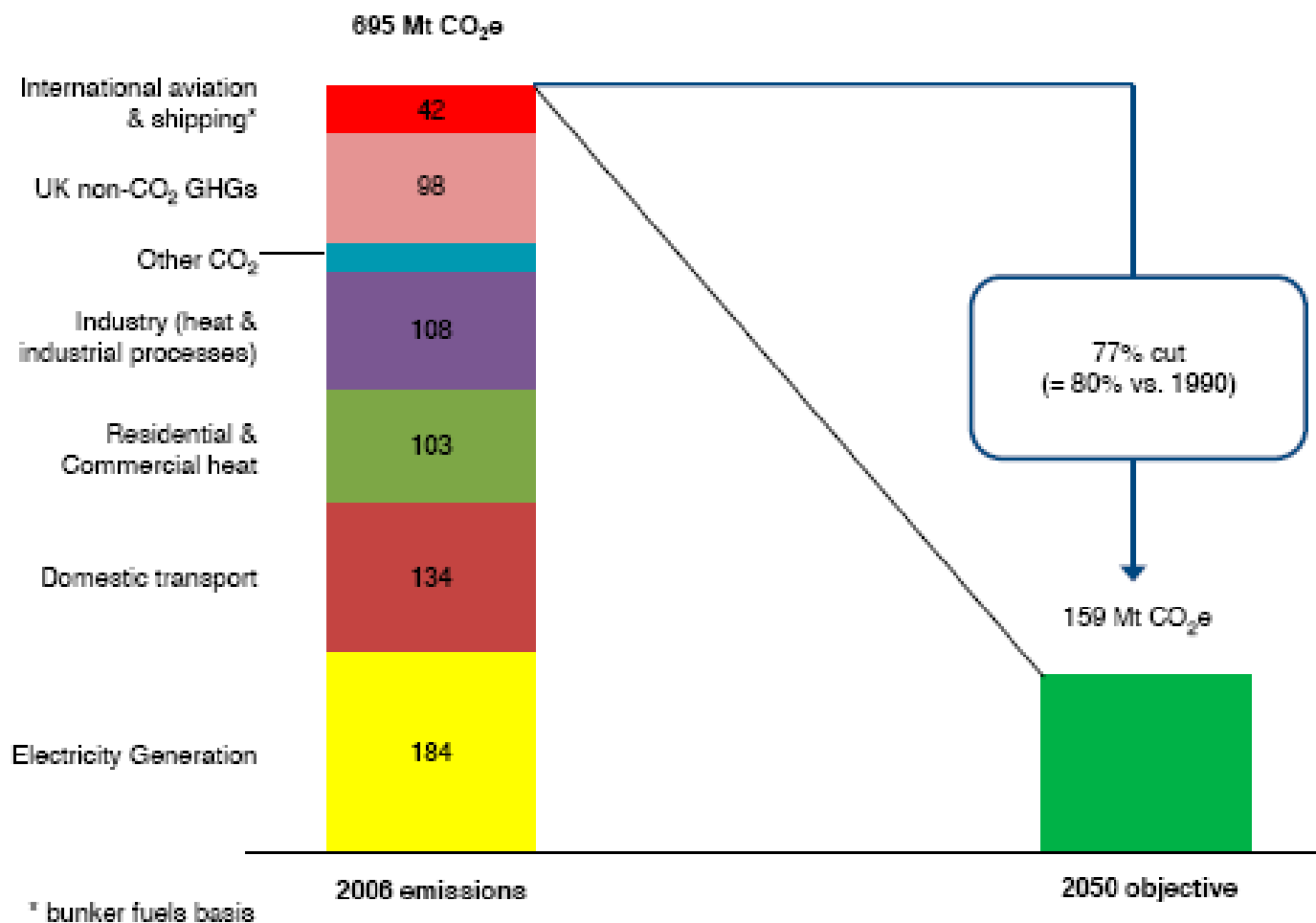
- Change in policy landscape from climate change ‘problem’ to low carbon innovation ‘solution’
- Incorporation of ambitious targets into national and transnational legal form
- Driven by mix of global treaty obligations & local informed advocacy
- Remains the basic trend of policy despite the new post- Copenhagen context

The UK strategy 2009

The UK Low Carbon Transition Plan

National strategy for climate and energy

Figure 2.1 The scale of the challenge



Source: UK National Atmospheric Emissions Inventory (2006).

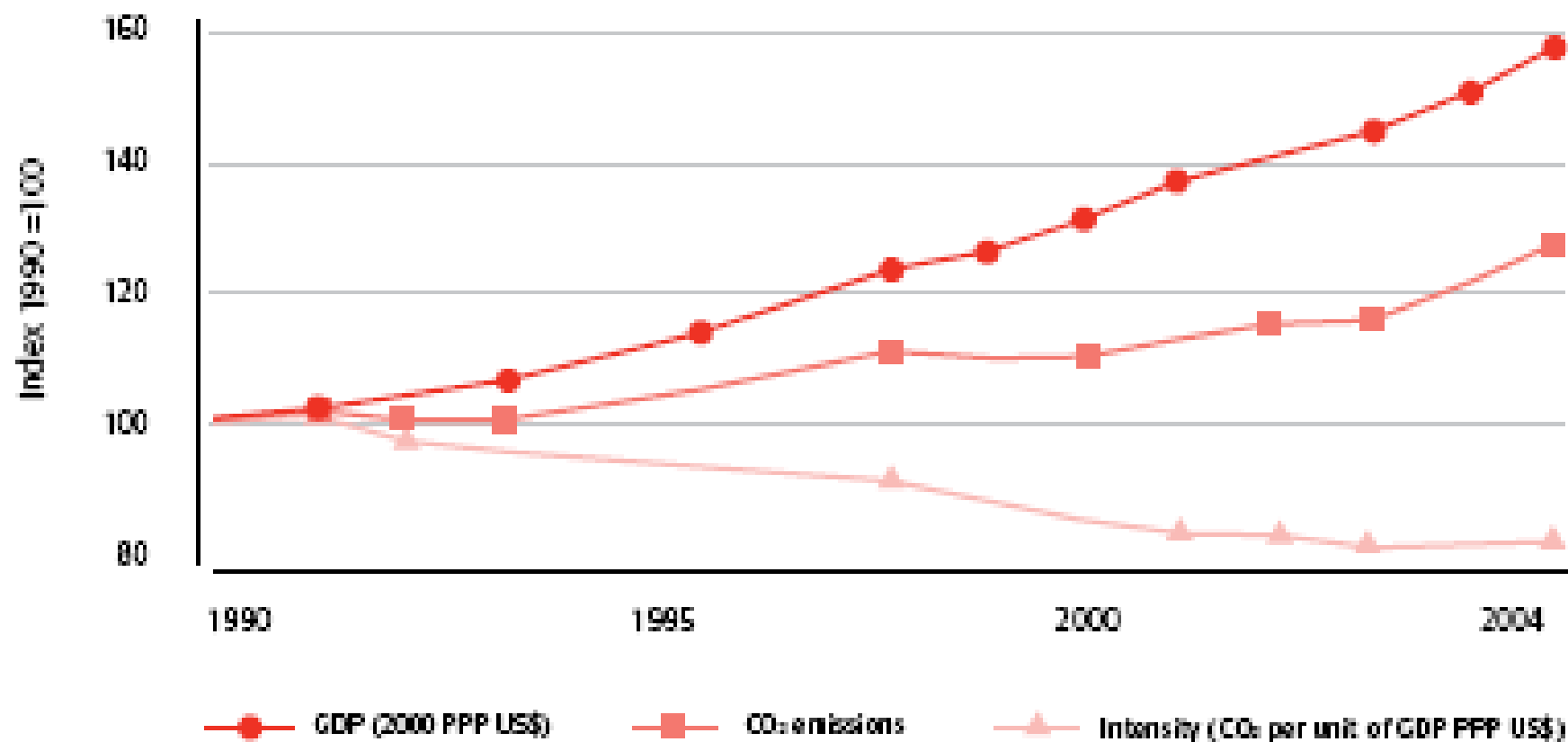
In summary

- A variety of national governments are incorporating carbon targets into their economic and social policies
 - The targets are highly ambitious given the national track records
 - Despite the setback for a new global treaty this represent a highly significant policy domain
 - The global challenge remains huge
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The limits of incrementalism

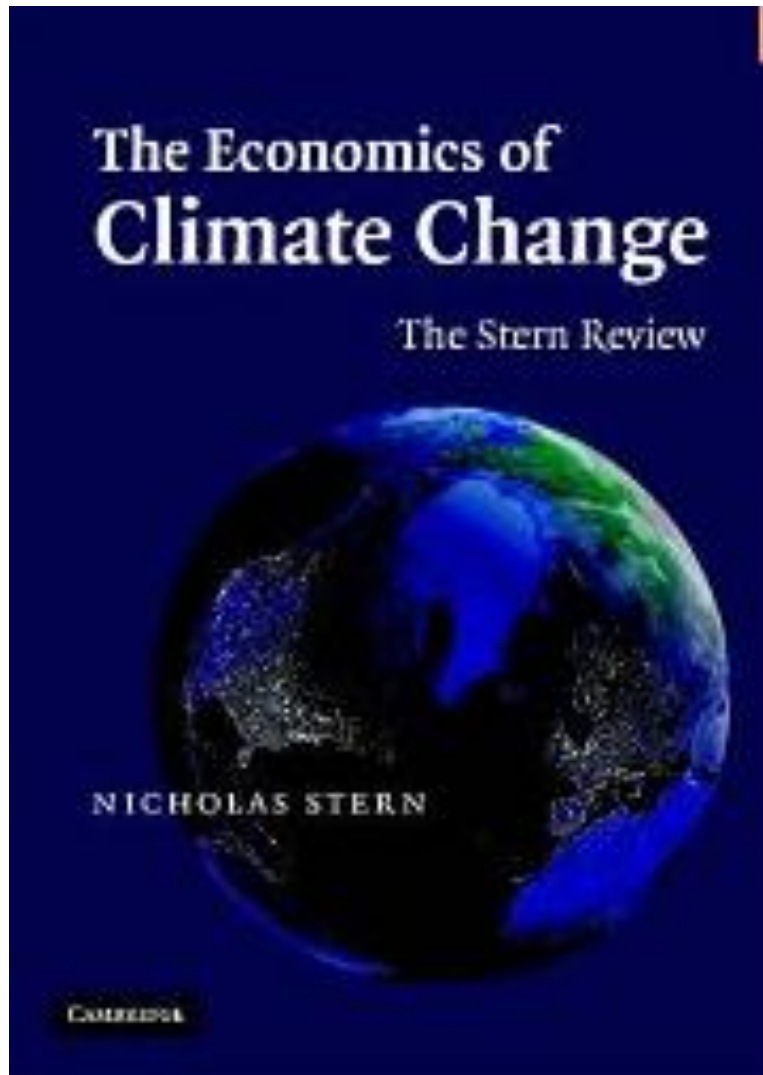
- Greening of technology – incrementalism does deliver...but
 - Lock-in and narrow focus
 - Relative improvements in resource use & pollution impact eg: household appliances, cars, aeroplanes
 - Yet, environmental impact of household and personal transport continue to increase - the 'rebound effect'
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Figure 3: Carbon emissions and lower carbon innovation.



Source: UNDP (2007) 'Human Development Report 2007/2008. Fighting Climate Change: Human Solidarity in a Divided World.' New York: Palgrave Macmillan

Stern review 2006



- managing the **transition** to a low-carbon economy
- radical change may not be delivered by the markets
- technology-neutral incentives should be complemented by focused incentives to bring forward a portfolio of technologies
- technology-specific early stage deployment support
- governments must accept that some technologies will fail.

The academic roots of transitions thinking

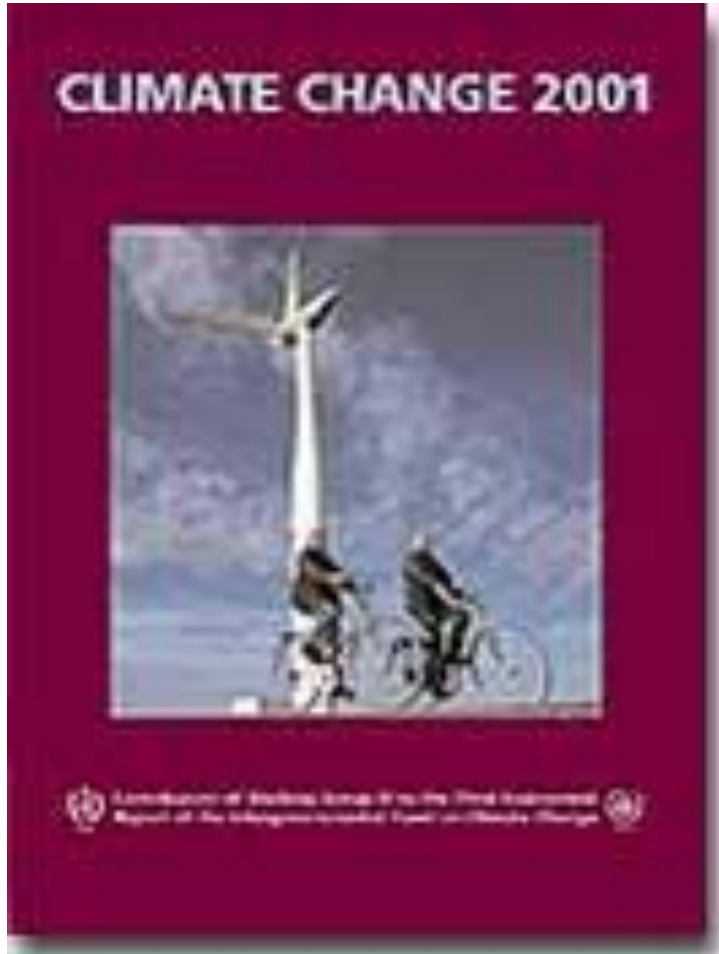
- Netherlands based research over 15 years
- Kemp, René (1994), 'Technology and the Transition to Environmental Sustainability. The Problem of Technological Regime Shifts', *Futures* 26(10): 1023-46.
- Geels, F.W., 1999, 'Technological transitions and socio-technical scenarios', in: Dolfsma, W., Geels, F.W., Kemp, R., Moors, E. and Rip, A., 1999, *Management of technology responses to the climate change challenge: Theoretical elaboration of the co-evolutionary 'technology-in-society' Perspective*, Deliverable 1 for the Dutch National Research Programme on Global Air Pollution and Climate Change, Chapter 5, pp. 105-130

Transities vanuit sociotechnisch perspectief

Frank Geels and René Kemp¹

Nov 2000

IPCC wg3 3rd report on mitigation



- *broad **transition** strategies to achieve the long-term social and technological changes required by both sustainable development and climate change mitigation.*
- a gradual near-term **transition** from the world's present energy system towards a less carbon-emitting economy

Conceptual roots of sociotechnical transitions

- 2 strands in the interdisciplinary field of Science Technology & Innovation Studies oriented to radical change:
- Evolutionary theories of epochal transformations - 'technoeconomic paradigm'
- Interactionist theories of innovation path creation – 'social construction of technology'

A distinct meso level 'lens' or 'gaze'

- Nor a 'macro focus on a new principle of the economic system (mechanisation, information etc)
- Not a 'micro' focus on the new product or process
- The 'meso' reveals situated sociotechnical paths and choices

A synthesis within innovation studies

- Seeks to bridge economic and sociological strands in STIS
 - Dynamics of innovation in meso level sociotechnical systems
 - Engaged with practice 'managing/governing transitions'
-

A creative research agenda

- The multilevel perspective (MLP) – dynamics explained by interaction between ‘levels’ – more evolutionary economic in emphasis - variety + selection
 - Network reconfiguration perspective – dynamics explained by interaction between ‘actors’ – actor network theory (ANT) – more sociological in emphasis - enrolment, translation, durability
-

Policy needs new ideas

- The new consensus over the need for ‘revolutionary’ change precipitates a search for relevant ideas
 - One resource is the repertoire of historical analogies of episodes of ‘radical’ change
 - Another resource is the range of academic concepts on the dynamics of innovation and change
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A pragmatic policy agenda

- Focus on the domain of innovation policy
 - Explore how new sociotechnical transitions ideas are reshaping policy in practice
 - Rules of thumb, principles for policy makers
 - Pragmatic alternatives to fundamental governance paradigm debates
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The new innovation policy

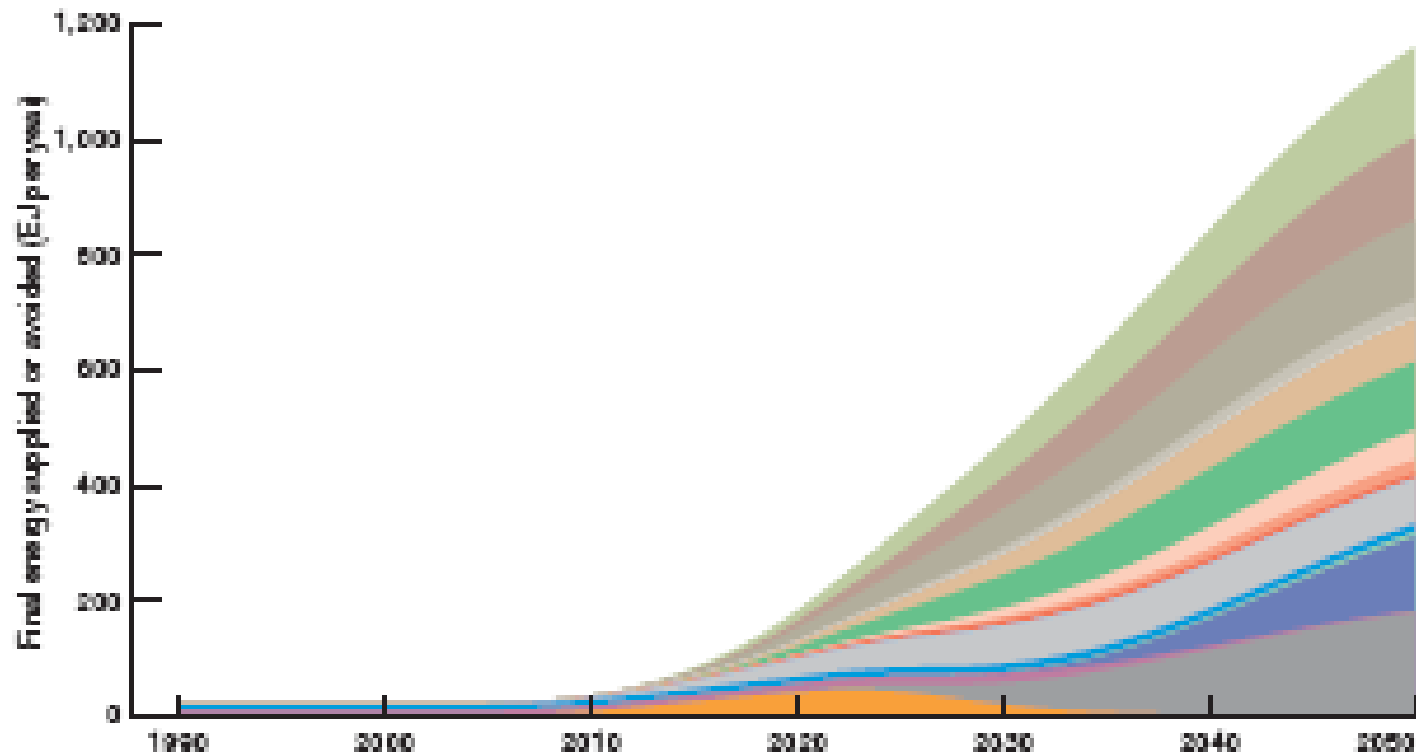
- Challenge led
 - Demand side
 - Social as well as technological
 - Public and private actors
 - Interactive networks
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Sources

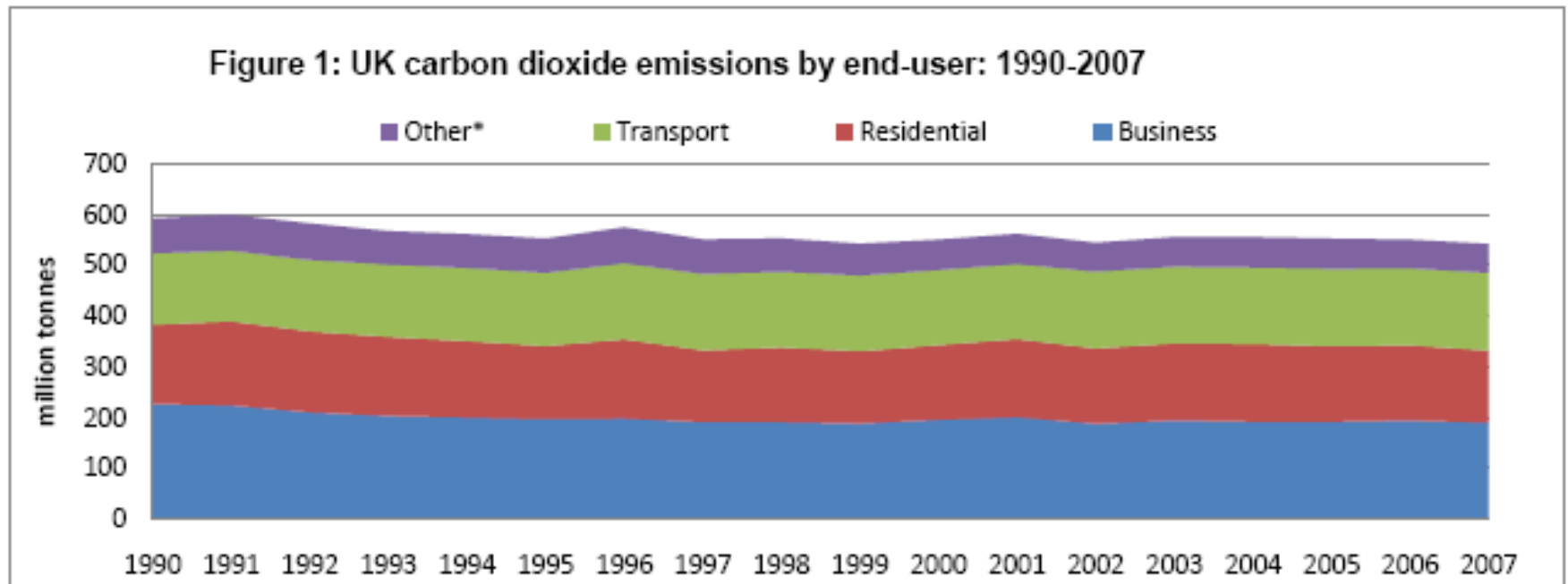
- Interactive - Freeman, Rothwell SPRU
 - User led – von Hippel
 - Open – Chesbrough
 - Actor networks – Callon, Latour
 - Innovation commons – Lessig
 - Sociotechnical transitions – Geels, Schot
-

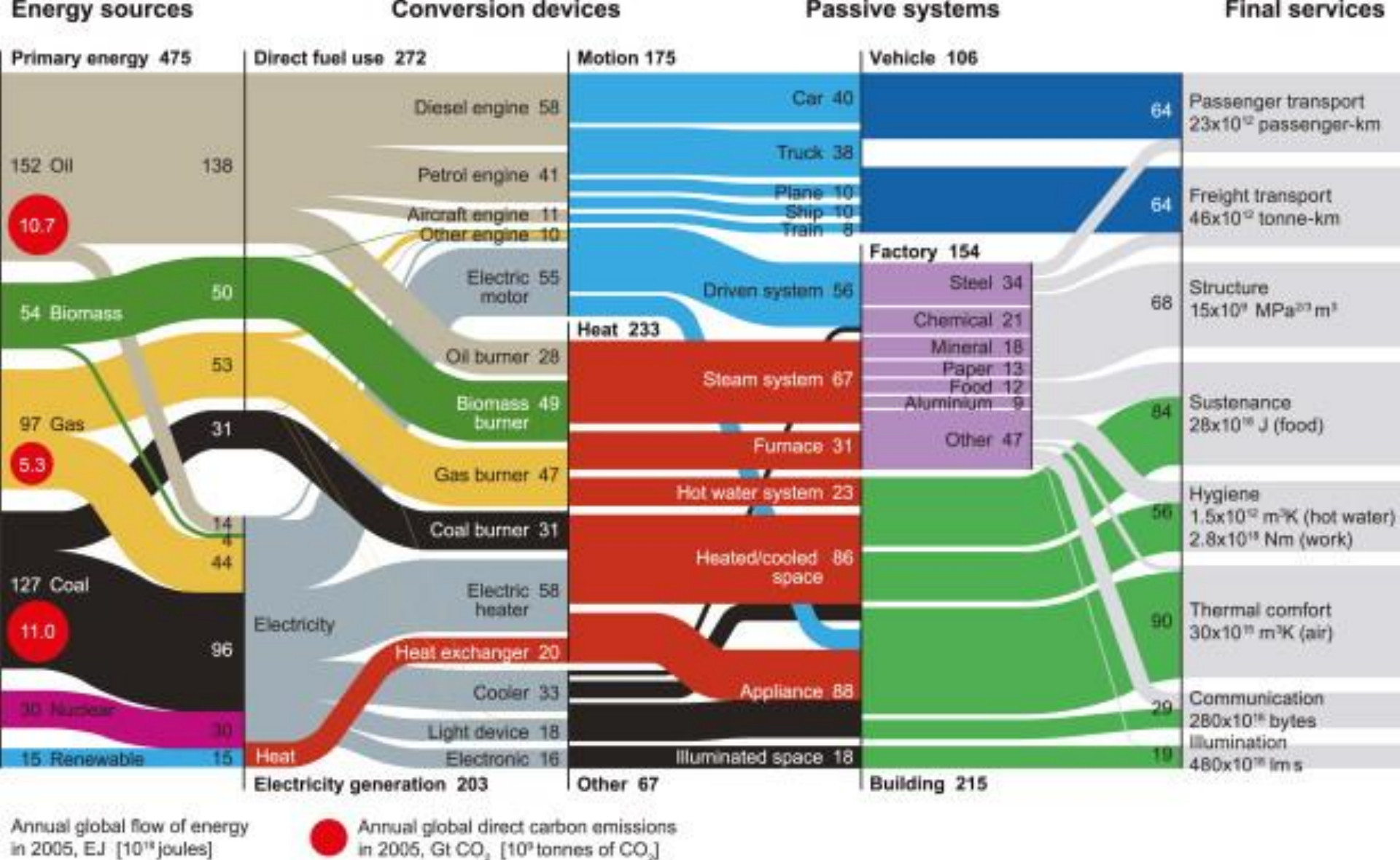
The policy need for diversity

Fig. 35: REPRESENTATIVE SCENARIO OF THE CLIMATE SOLUTIONS MODEL



The policy need to address end use





Global energy flows 2005

Cullen & Allwood 2010

Provocation 07: April 2008

NESTA Making
Innovation
Flourish

Breaking the boundaries

Transformative innovation for the global good

By Fred Steward



Five principles for reconfiguring innovation policy for sustainability

- Long term visions –short term action
 - Sociotechnical approach – bridging new technology and behavioural change
 - Global and local – reconfiguring national innovation policy
 - Invention and imitation – being realistic about novelty
 - Incumbent and emergent – recognising contradictions within the business world
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The Feasibility of Systems Thinking in Sustainable Consumption and Production Policy

October 2008

A research report



Facilitation of systemic innovation

- different to the traditional management of singular technological innovations
 - framed as a social challenge rather than technological goal
 - co-evolution of technological and behavioural change toward
 - involvement of diverse stakeholders representing demand as well as supply
 - spanning of different scales of activity
 - bridging of long-term visions to near-term action
-

Requirements for systemic policy instruments

- Address 3 core systemic issues
 - networks
 - expectations
 - learning
- Need for a new integrated policy framework

Networks

- New instruments include 'transition platforms' (NL) and conflict solving groups (CH)
- Networks need to be broad including entrepreneurs, activists, and users
- Preferable to build on existing networks but institutional inertia means that institutional innovation is often needed
- Network building has to acknowledge tensions and needs 'political' capabilities, and new intermediaries

Expectations

- New instruments include scenario building and shared mission communication
 - Visions need to step outside current framings but to connect to the present
 - Effective framing is often a consumption-oriented social challenge
 - Participative foresight with multiple scenarios is better than expert forecasting of 'best prediction'
-

Learning

- New instruments include sociotechnical experiments and sustainable places
- Oriented to consumer and cultural change rather than the technical feasibility focus of traditional R&D/demonstration projects
- ‘Learning by doing’ rather than go/no go investment decisions
- Portfolio diversity more important than early selection
- Investment in exploration and prototyping in a social setting limited by space or scale

Policy integration

- System-oriented policy instruments do not fit easily into existing institutional and departmental frameworks
- New vertical and horizontal policy integration is needed between
 - environment and innovation
 - functional areas (mobility, shelter etc)
 - different levels of governance
- Needs significant resources, combined with cross-functional SCP champions and the requisite policy capacity

A sustainability oriented innovation policy

- Need for system innovation
 - Involves technology & social change
 - Crosses the production & consumption divide
 - The reintroduction of societal mission
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An odd contrast

- Pragmatically policy recognises:
 - Transformative change
 - Sociotechnical character
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- Yet intellectually remains focused on:
 - Individual (incremental) choice
 - Separation of the technical and the social
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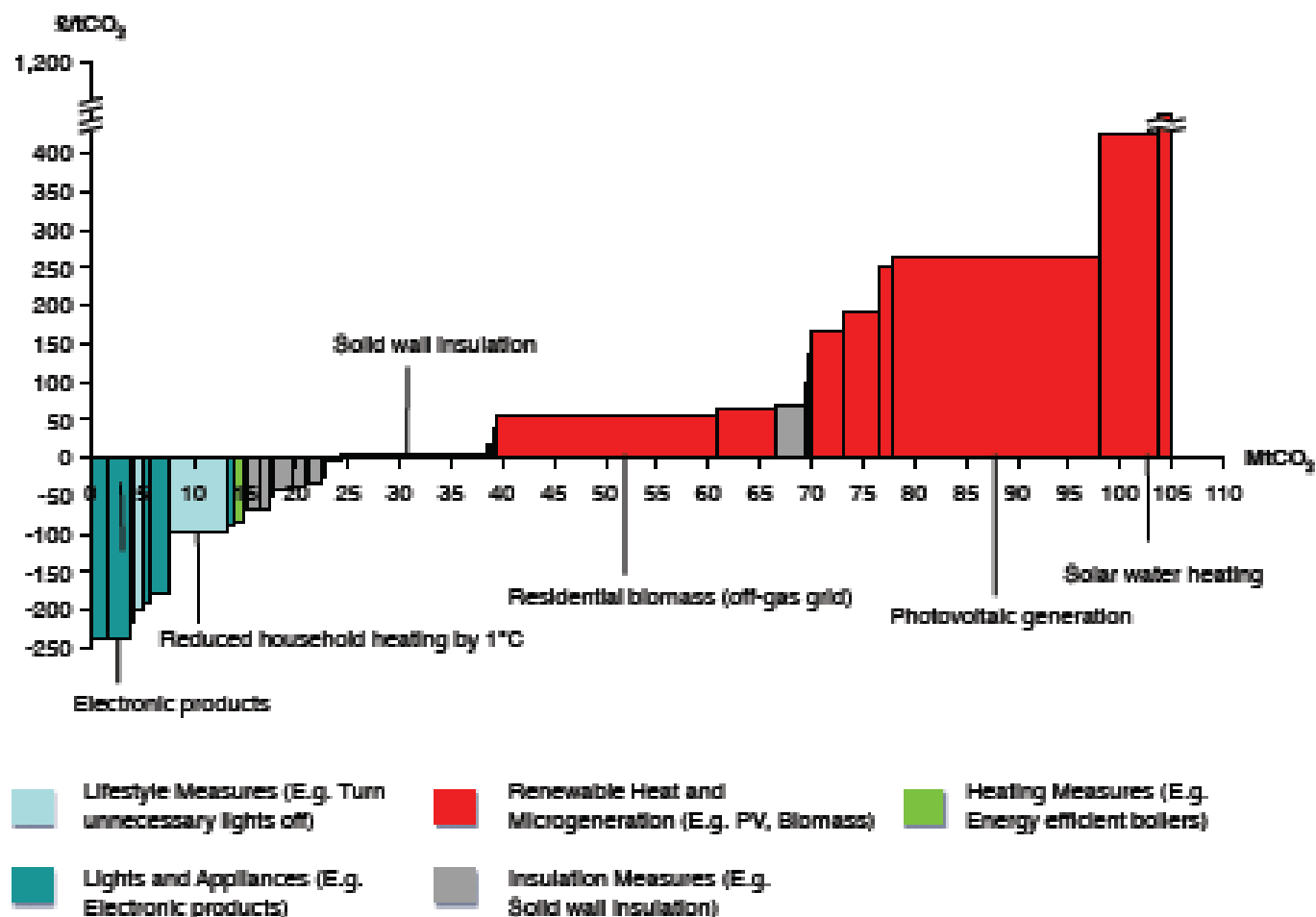
Economic incentive perspective

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



- The Marginal Abatement Cost Curve
MACC
- Market induced model
of innovation
- Create 'carbon market'
to address externalities
- Emission trading
schemes vs green
taxes

Figure 6.10 Residential sector MACC – technical potential in 2020



Source: CCC

Limitations in reality

- Take up of currently profitable options is much less than predicted
 - 'Non-economic' barriers
 - Future oriented market incentives difficult to implement
 - Carbon price is 'not high enough'
-

Psychological persuasion perspective

www.defra.gov.uk

A FRAMEWORK FOR PRO-ENVIRONMENTAL BEHAVIOURS

REPORT

January 2008

- Focus on 'behaviour change'
- Analysis of individual willingness and ability
- Policy measures designed to 'influence'

People's willingness and ability to act

Who is willing to do what

Ability to Act

High ability and willing

0%

Low

Willing to Act

100%

High proportion of population

Low ability and unwilling

Low

Adopt lower impact diet

Avoid unnecessary flights (short haul)

Use carless for short trips

Use more efficient vehicles

More responsible water usage

Better energy management

Waste less food

Increase recycling

Eat more food that is locally in season

Buy energy efficient products

Install insulation

Install microgeneration



Limitations in reality

- Take up of 'headline' behaviours very variable
 - 'Non-individual' factors
 - Fundamental pervasive change very difficult
 - Policy measures not sufficiently 'sophisticated' or 'targeted'
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The policy opportunity

- New policy initiatives increasingly recognise the importance of socially situated practices
 - Yet policy advice remain dominated by economics (the market) and psychology (the individual)
 - Sociological approaches to science, technology and innovation studies need to assert themselves much more effectively in the policy domain
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‘Sustainable transition’ innovation policy -

Principle 1

- National in scope based on global consequence
- Challenge led, not technology driven
- Specific long term environmental goals eg ghg emissions, biodiversity
- Translated into near term goals in terms of targets that fit real policy cycles around 5 years
- Given high status eg legal commitment

‘Sustainable transition’ innovation policy-

Principle 2

- Promotion of ‘use’ oriented networks
 - Defined by broad areas of societal needs – food, shelter, mobility, comfort, communication
 - Practice based social experimentation – ‘learning by doing’ given support comparable to science & technology budgets
 - Develop new situated visions and expectations
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‘Sustainable transition’ innovation policy-

Principle 3

- Ensure diversity of actors within innovation system
- Focus should be on ‘system’ oriented actors such as
municipal and regional actors
infrastructural actors
civil society actors
- Support the rights of emergent sustainability actors eg green entrepreneurs

‘Sustainable transition’ innovation policy-

Principle 4

- A new transformative discourse
 - Alternative to the prevailing narratives will be more network oriented
 - Breaks with the conventional ‘technology’ or ‘social’ framings
 - Relocates innovation in a context of societal purpose by spanning boundary between environmental and innovation policy
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