

# **Towards a new complexity economics for sustainability**

**-a response**

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# Change in the institutional framework – Climate Change Act 2008

# Climate Change Act 2008: Carbon budgets - the first system of their kind anywhere in the world



## A concrete reporting cycle set through UK law

- Setting limits on emissions for each five year period
- Set fifteen years in advance to give long-term clarity
- Requiring regular reporting to Parliament, and scrutiny by the CCC

## Genuine financial consequences if budgets aren't met

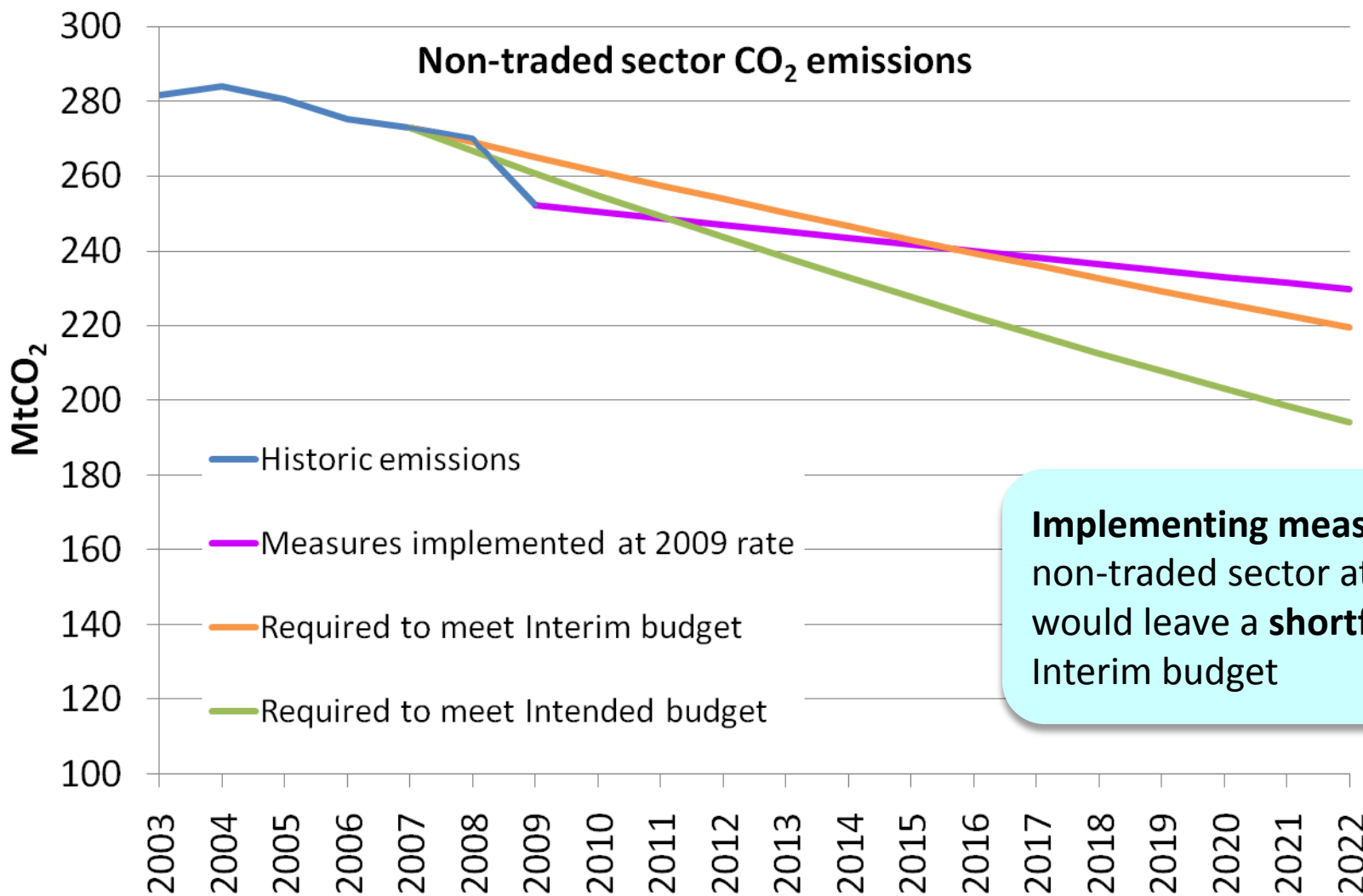
- The Climate Change Act means the carbon budgets are legally binding and have to be met
- Any shortfall must be met by purchase of international credits

## Going beyond international commitments and ensuring their delivery

- A higher level of ambition than our international commitments require
- A clear framework enshrined in domestic law for delivering economy wide emissions cuts

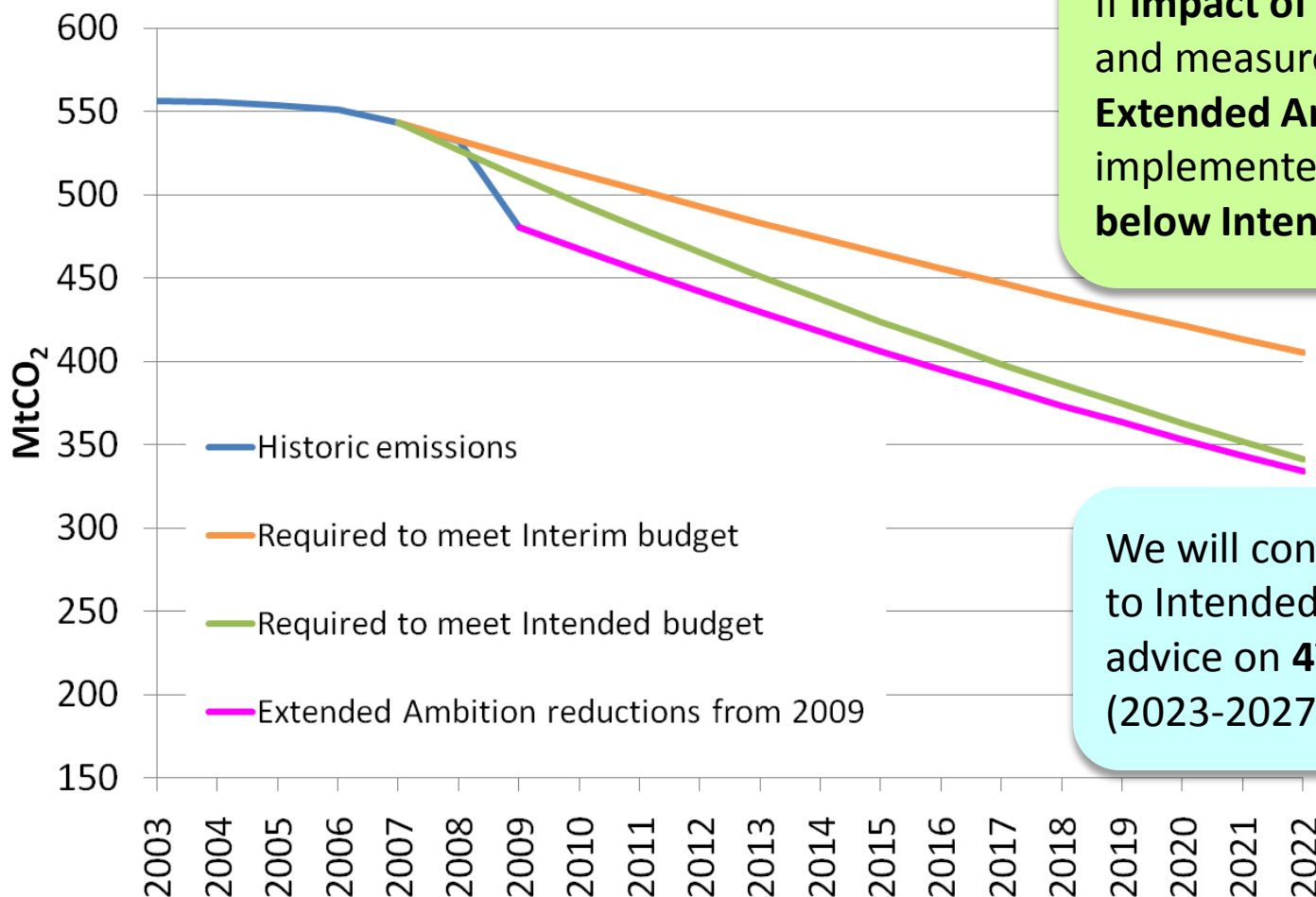
# Reconciling economic growth and environmental sustainability

# Despite emissions reduction in 2009, step change in underlying progress still required



**Implementing measures in the non-traded sector at 2009 rate would leave a **shortfall** to the Interim budget**

# Given step change, it could be possible to meet the Intended budget through domestic effort alone

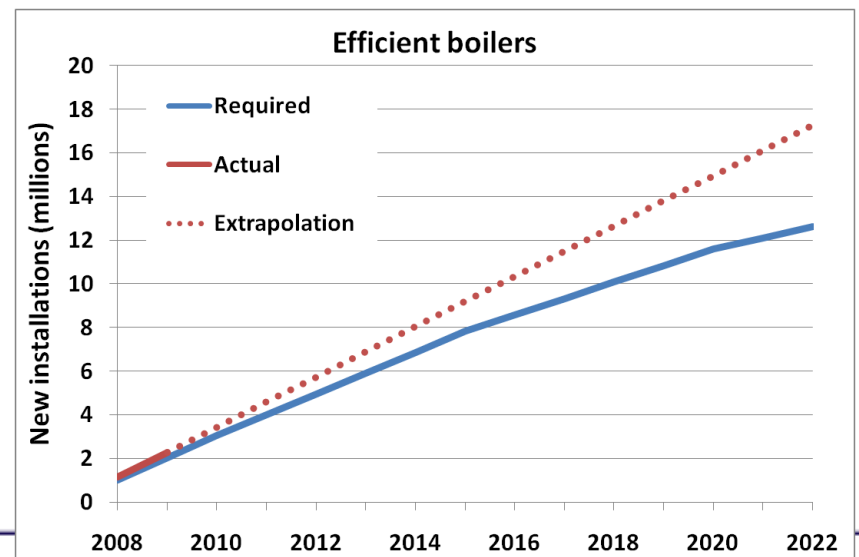
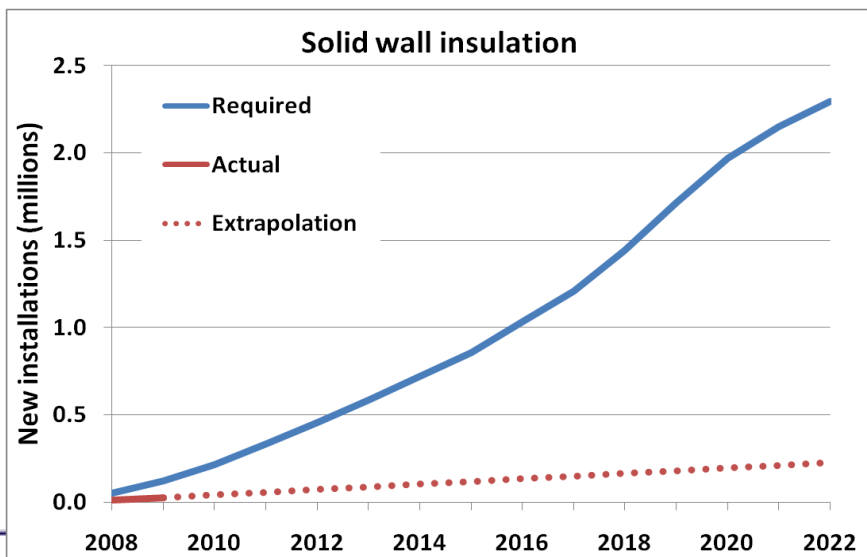
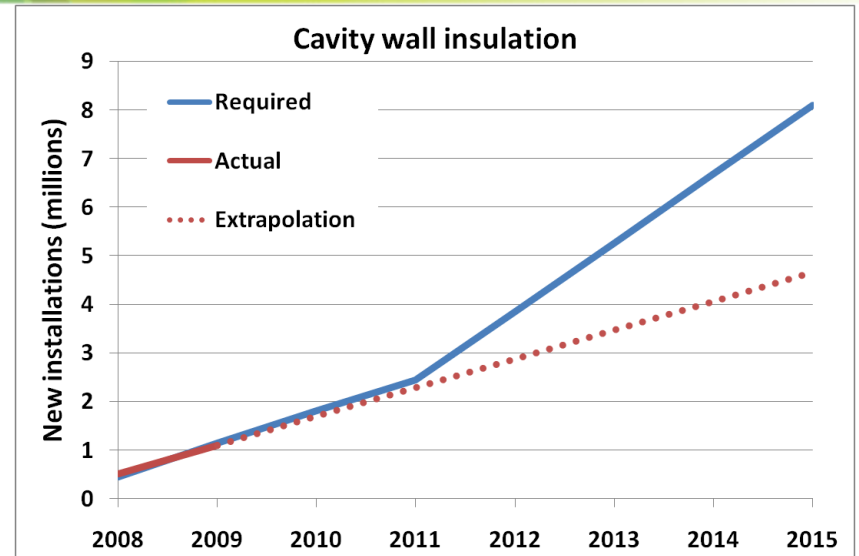
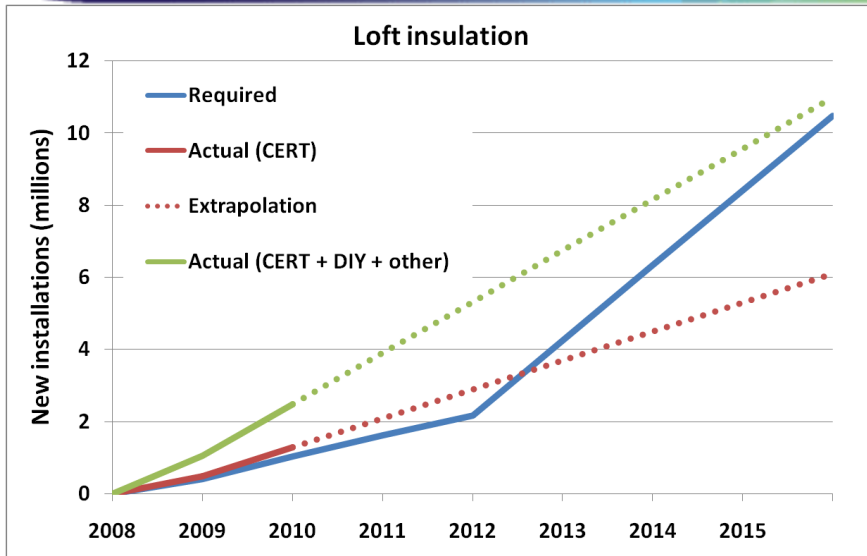


If impact of recession persists and measures in Committee's **Extended Ambition** scenario are implemented, emissions will be **below Intended budget**

We will consider possible move to Intended budget in context of advice on **4<sup>th</sup> carbon budget** (2023-2027)

# Policy learning – example

# Progress and challenges in the residential sector: need for step change in insulation





# Progress and challenges in the residential sector: policy development



- In our 2009 progress report, Committee recommended a **3 pillar approach** to National Energy Efficiency Programme
  1. Whole house
  2. Neighbourhood / area based
  3. New financing mechanism (some subsidy, some Pay As You Save)

- **Home Energy Management Strategy** published March 2010
- Political commitment to **National Energy Efficiency Programme** and 'Green Deal'

- **Further details needed** around specific policy delivery elements of National Energy Efficiency Programme (e.g. other levers in addition to Pay As You Save to address non-financial barriers)

# Still a big gap between ambition and achievement



- Govt projections on basis LCTP
- Move to Intended budgets (42% not 34% by 2020)
- 80% reduction more like 90% for CO2 excl. non-international A&S
- Scale of reduction in 2020s

# Insights from complexity economics....

Systems thinking	Examples: MARKAL (stochastic); Flexibility in generation sector: demand side response; integration with transport and heat Energy Market Reform
Evolutionary economics	Support development charging networks for EVs Build rates new low carbon generation Low Carbon RDD&D
Understanding behaviour change	Green Deal? Whole house. Local authority and other engagement