Committee on Climate Change

The role of gas in a decarbonised economy

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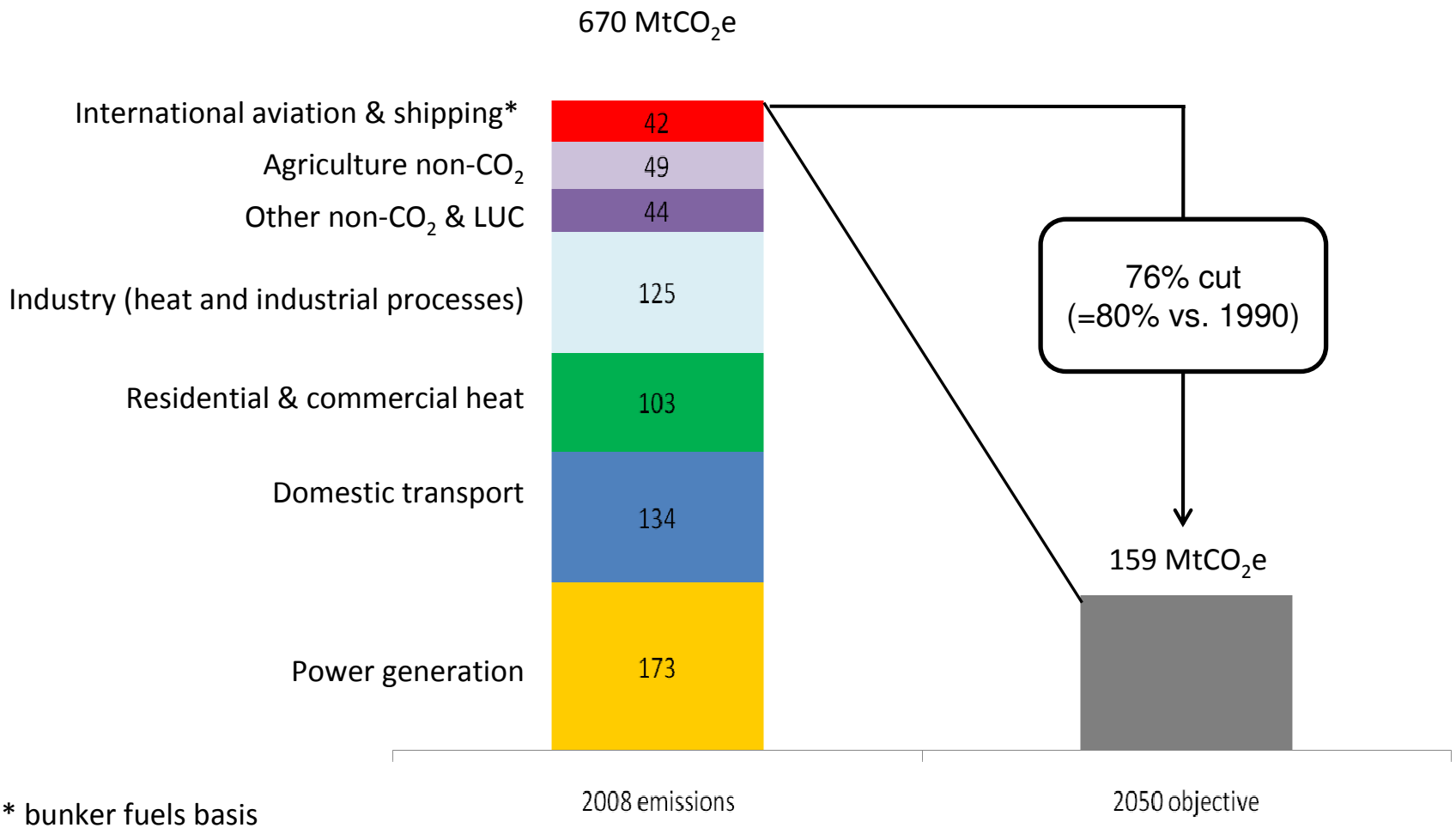
Structure

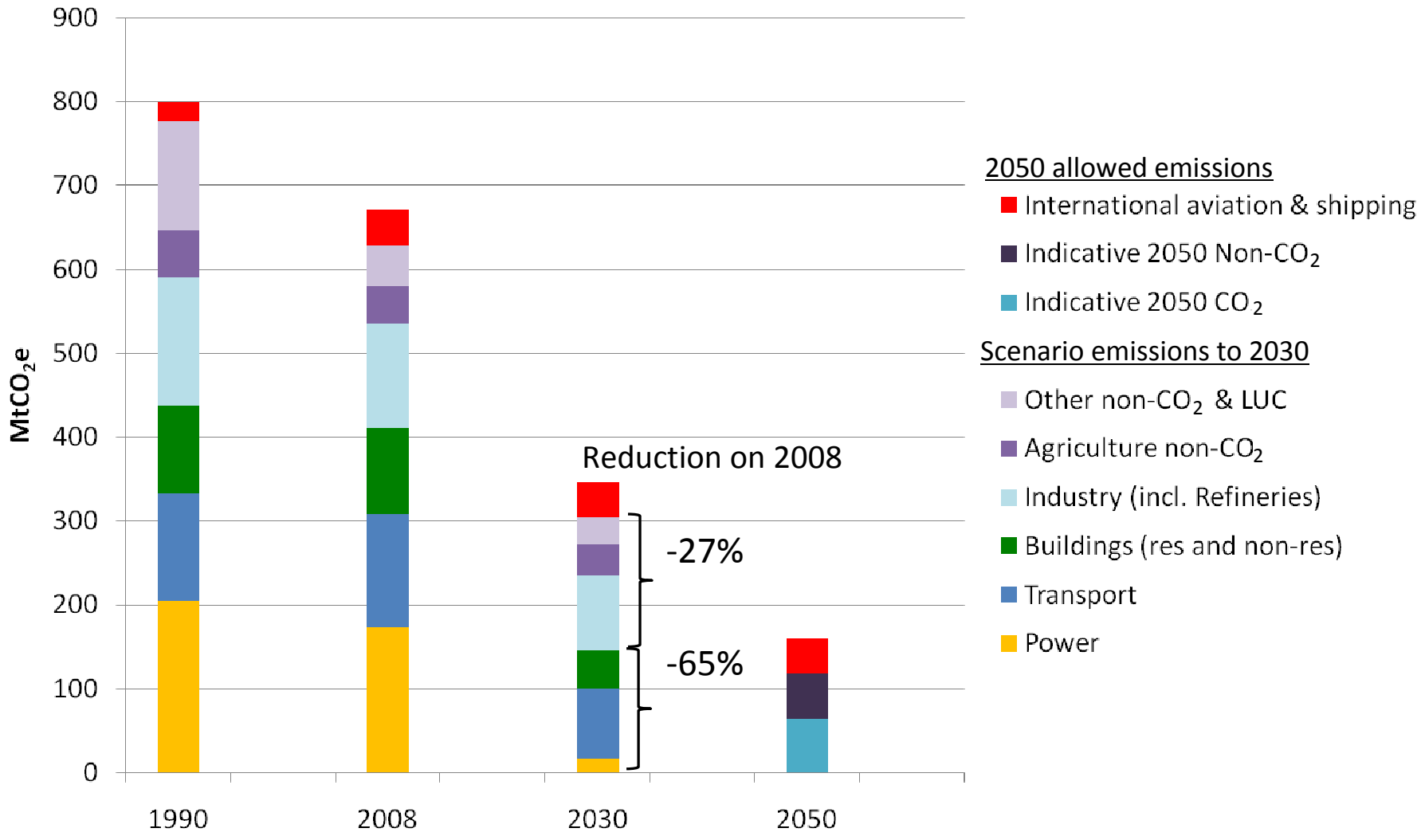
1. The 2050 target
2. The need for power sector decarbonisation
3. Costs and impacts
4. The EMR
5. Ongoing role for gas

The UK's 2050 target

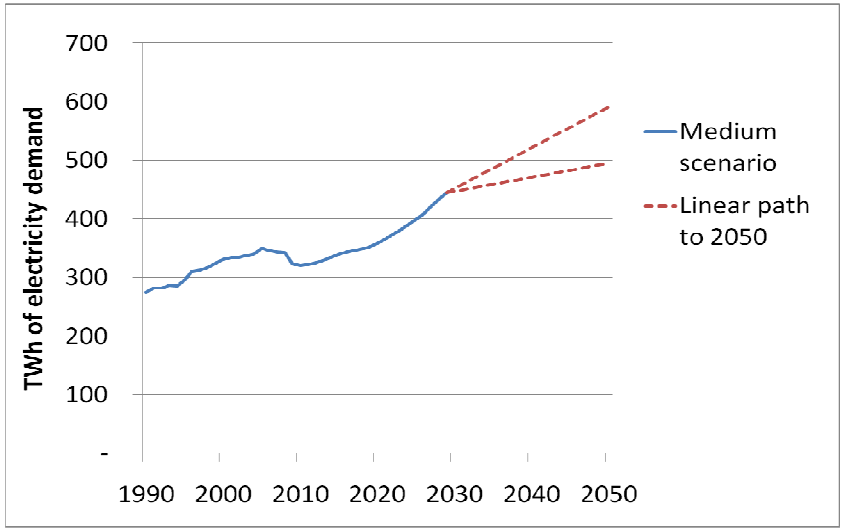


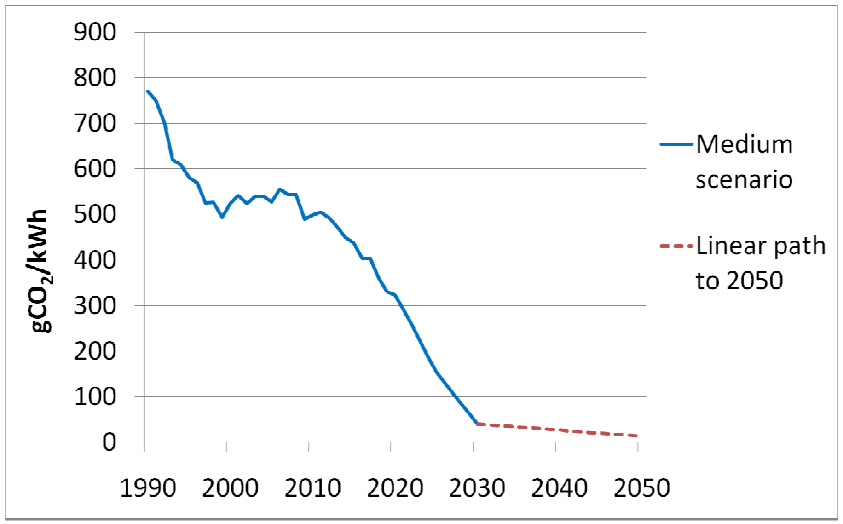
* bunker fuels basis

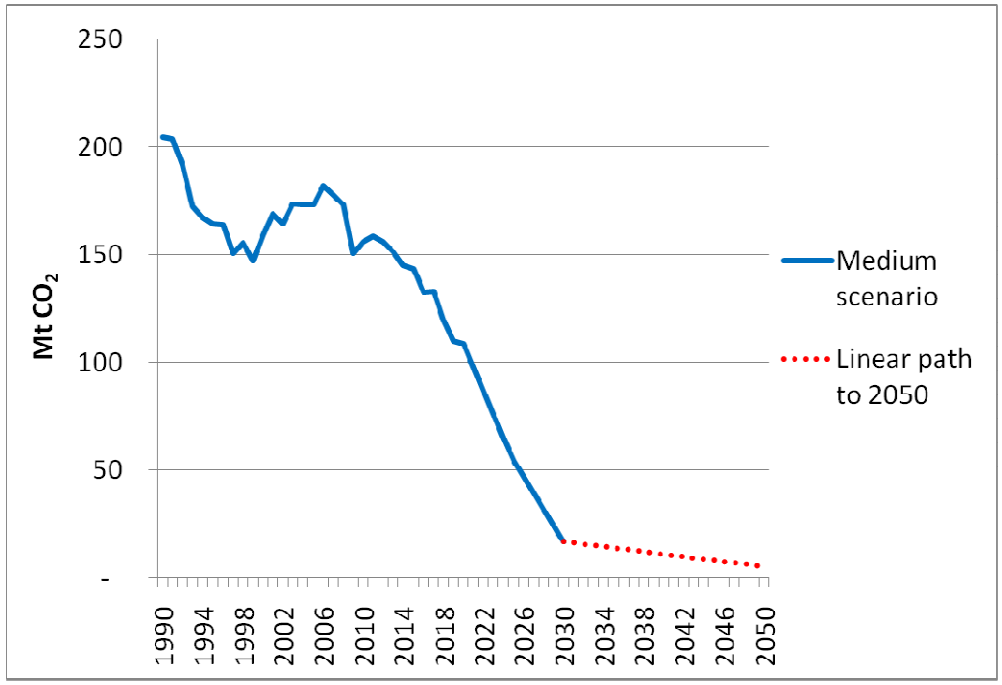
We have developed a feasible and cost-effective planning scenario for 2030 that is compatible with the 2050 target



Power sector: Emissions intensity will have to decrease, whilst demand is likely to increase...

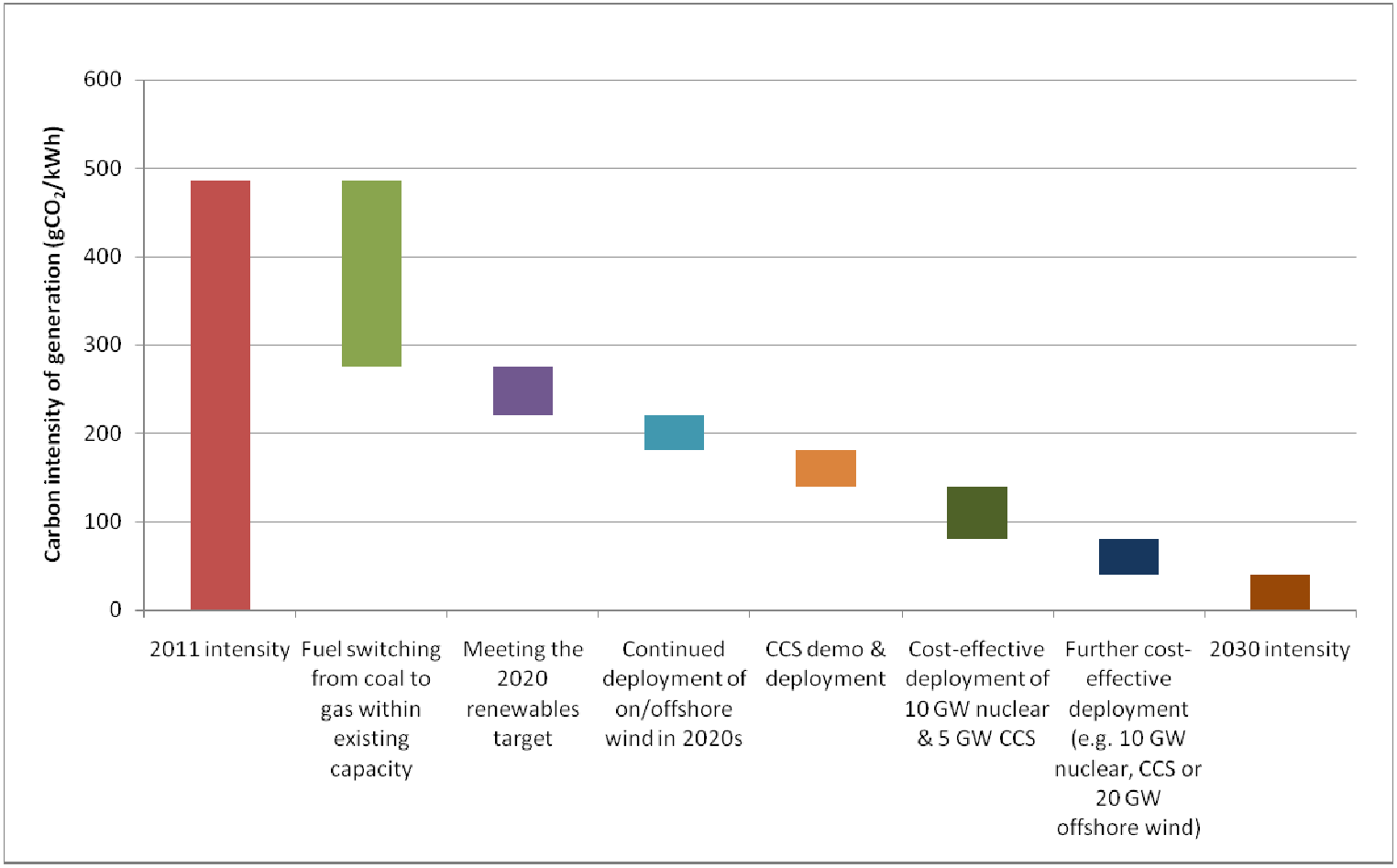




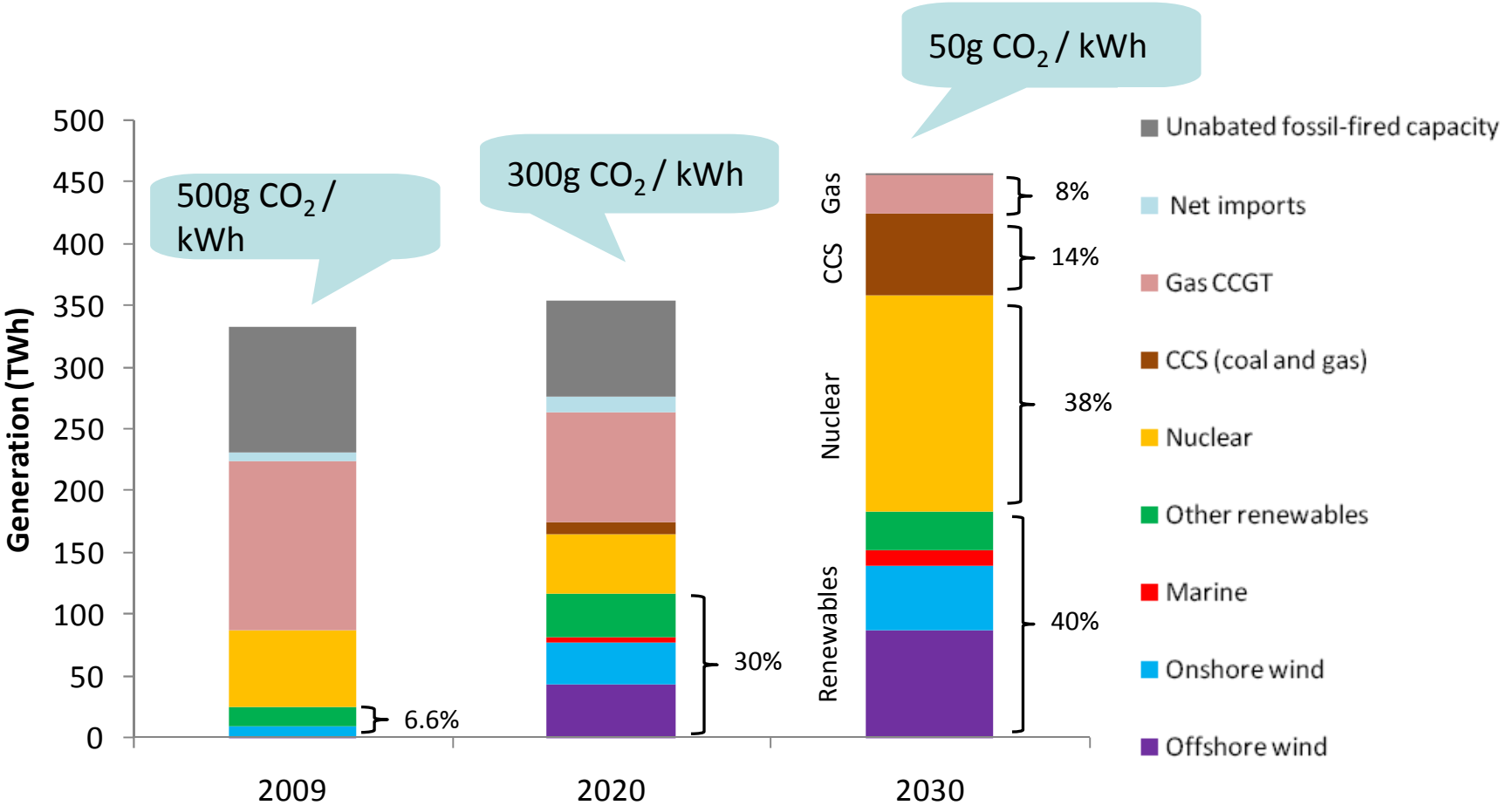


Source for 2050: range of MARKAL model runs for CCC (2010)

Getting from 500gCO_2/kWh to 50gCO_2/kWh

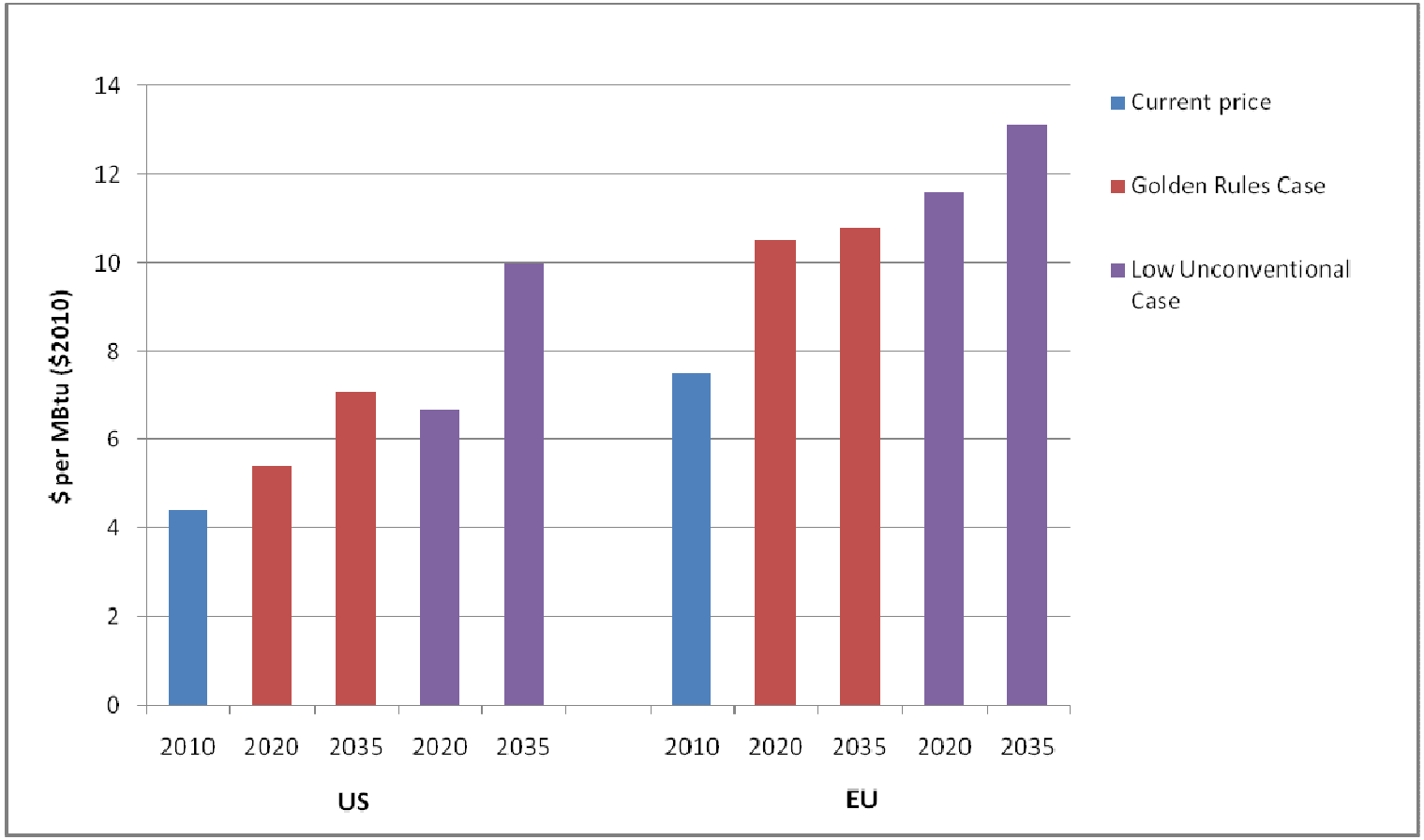


An illustrative scenario for power sector decarbonisation to 2030 – 40% renewable, 40% nuclear

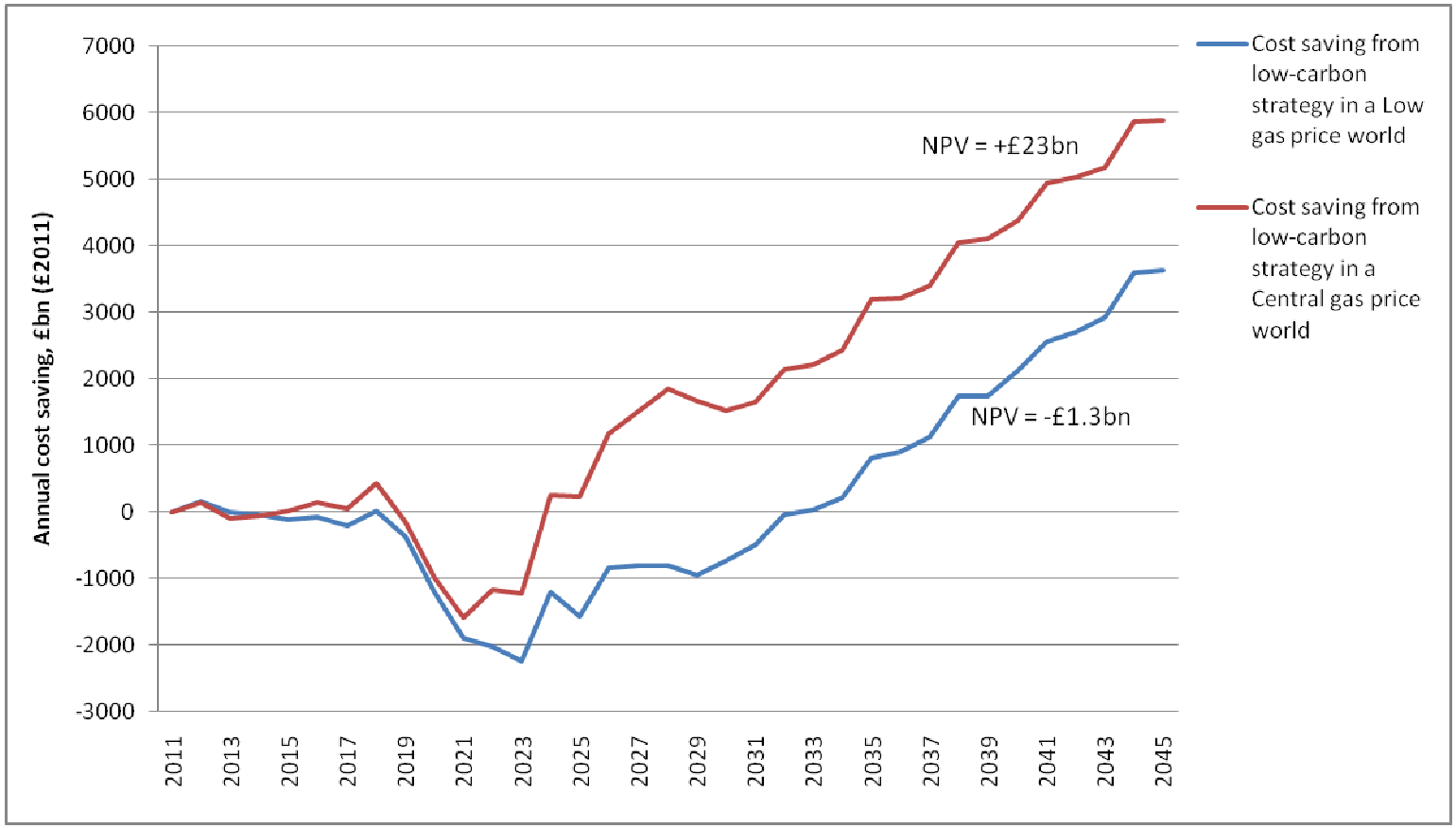


Source: DUKES (2010), CCC Calculations, based on modelling by Pöyry Management Consulting. Includes losses, excludes generator own-use and autogeneration.

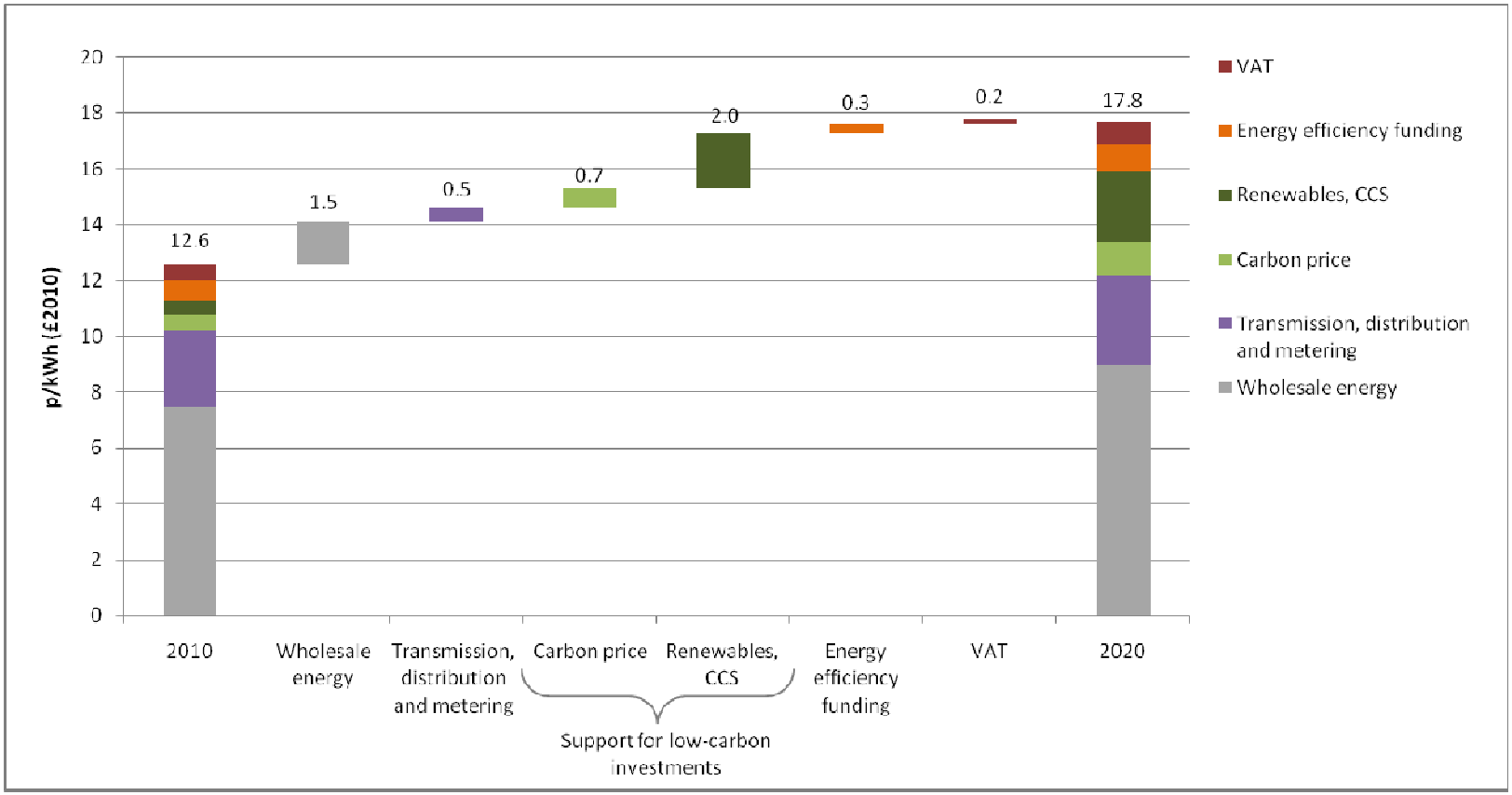
IEA gas price projections, US and EU



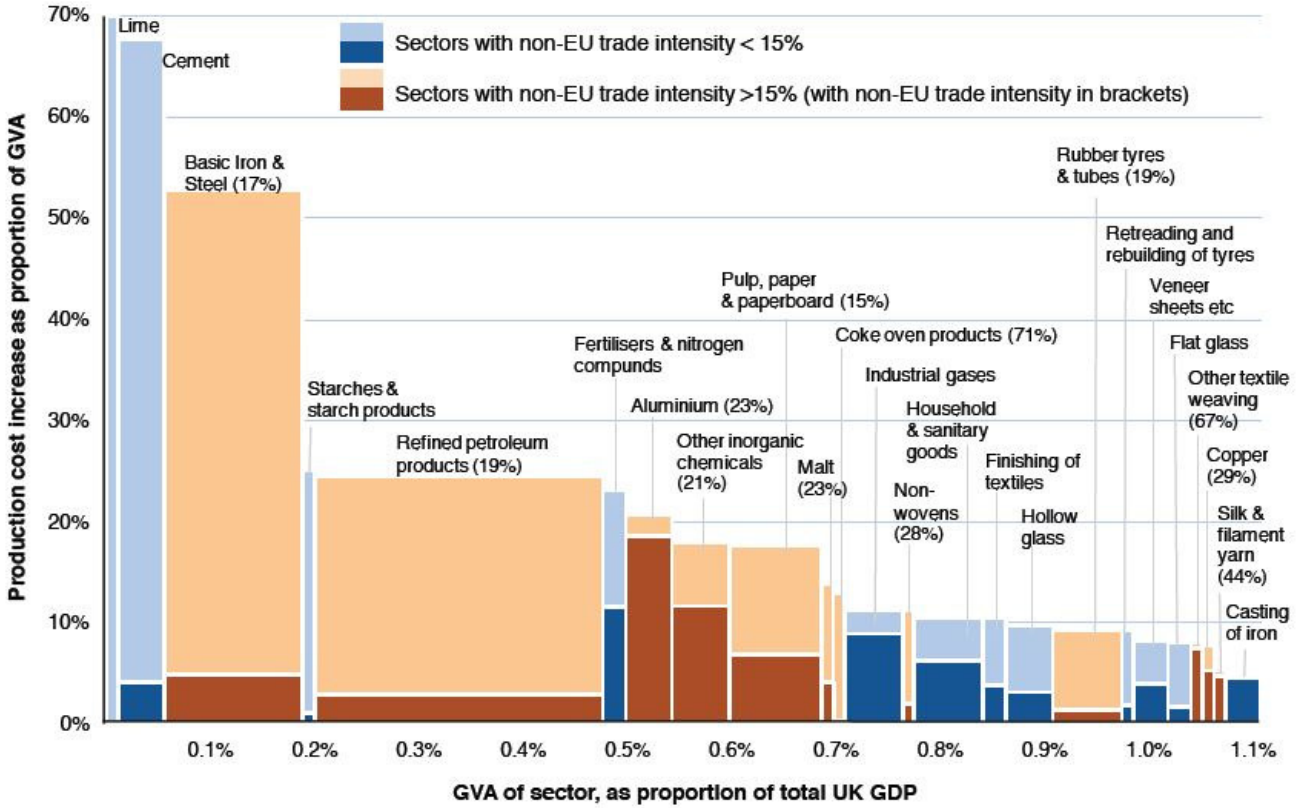
Cost saving from investment strategy focused on low-carbon rather than gas during the 2020s –central and low gas price worlds



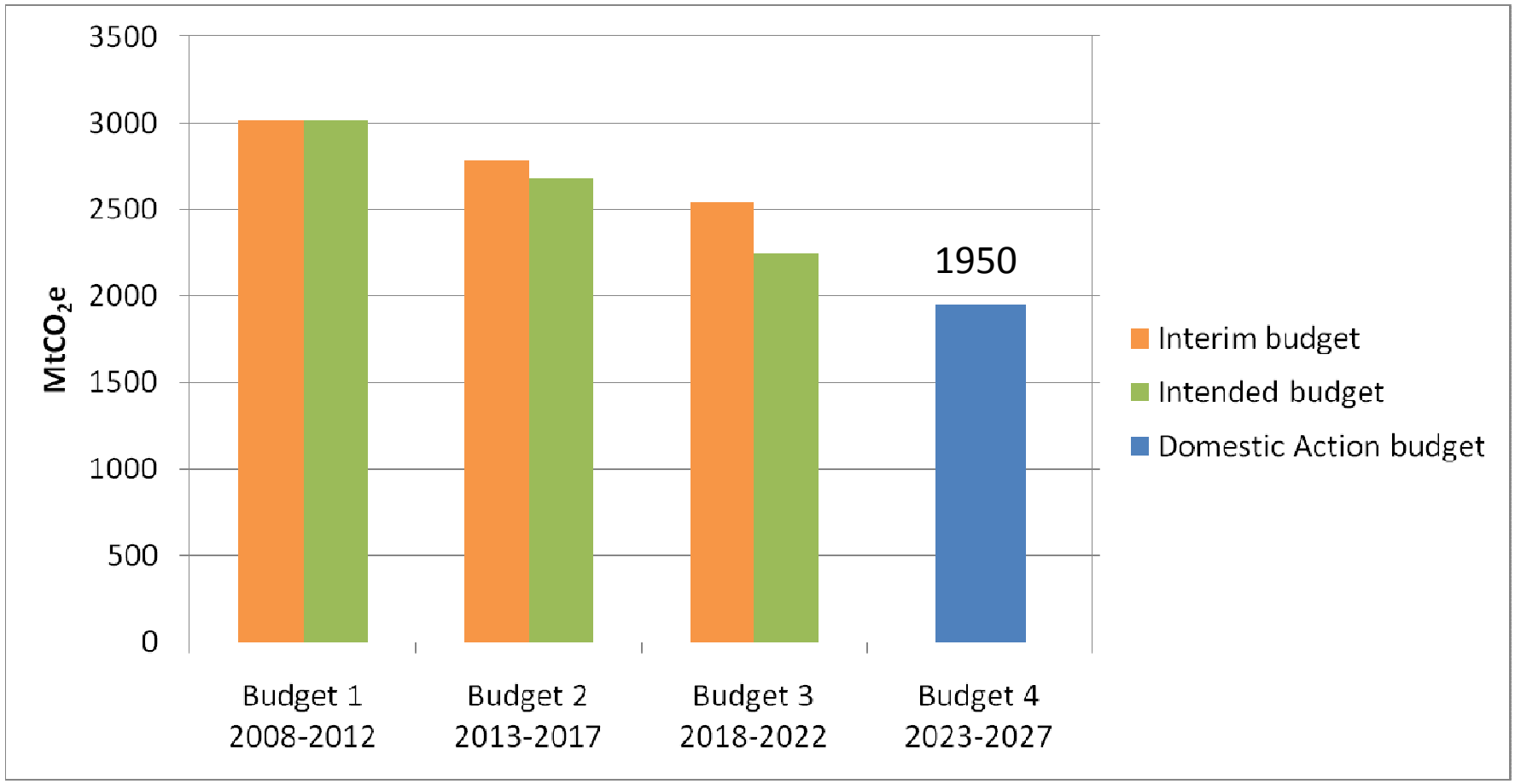
Projected increases in domestic retail electricity prices (2010-2020)



Competitiveness impacts – relevant for some energy intensive industries

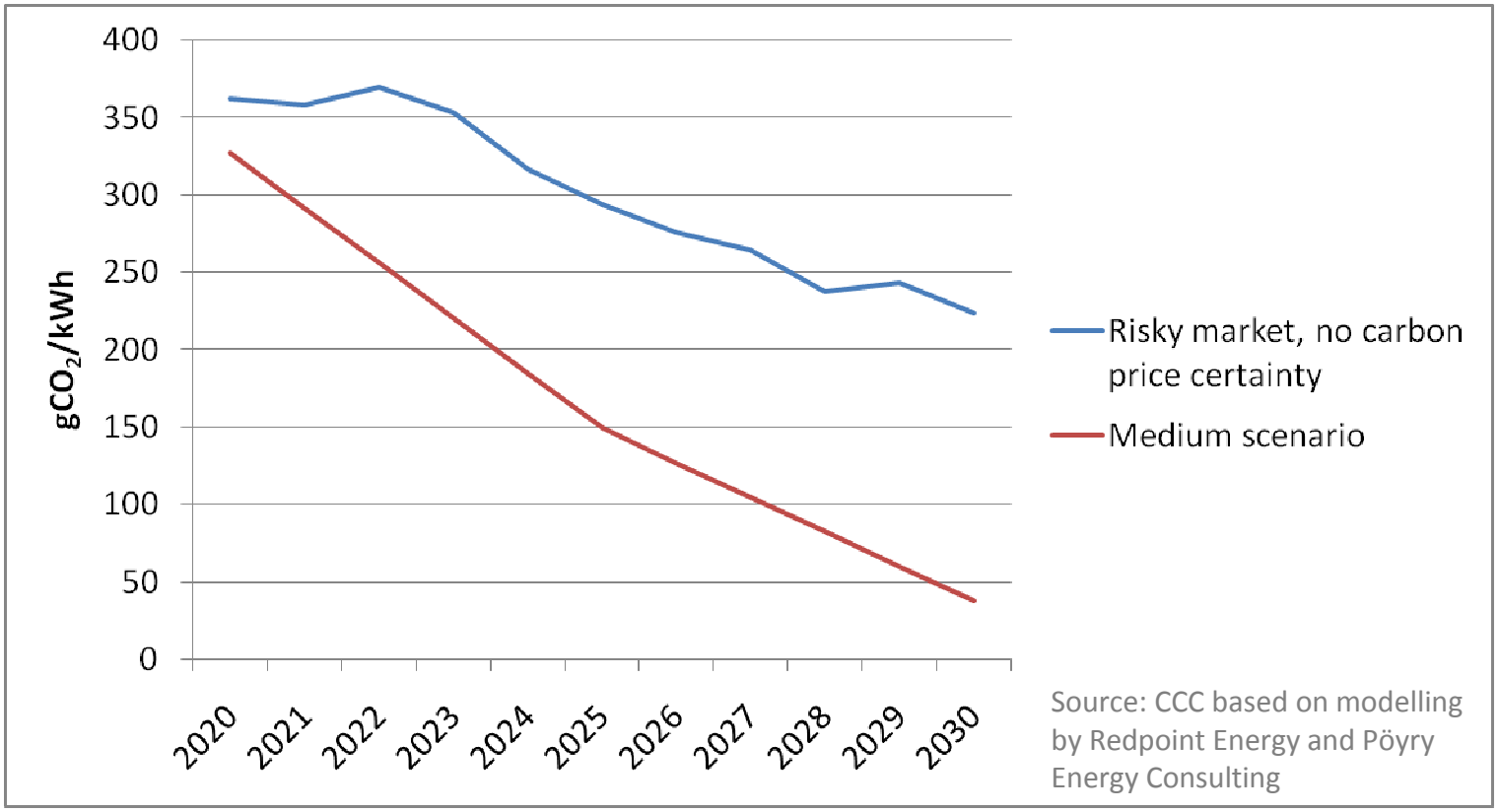


Interim, Intended and Domestic Action budgets



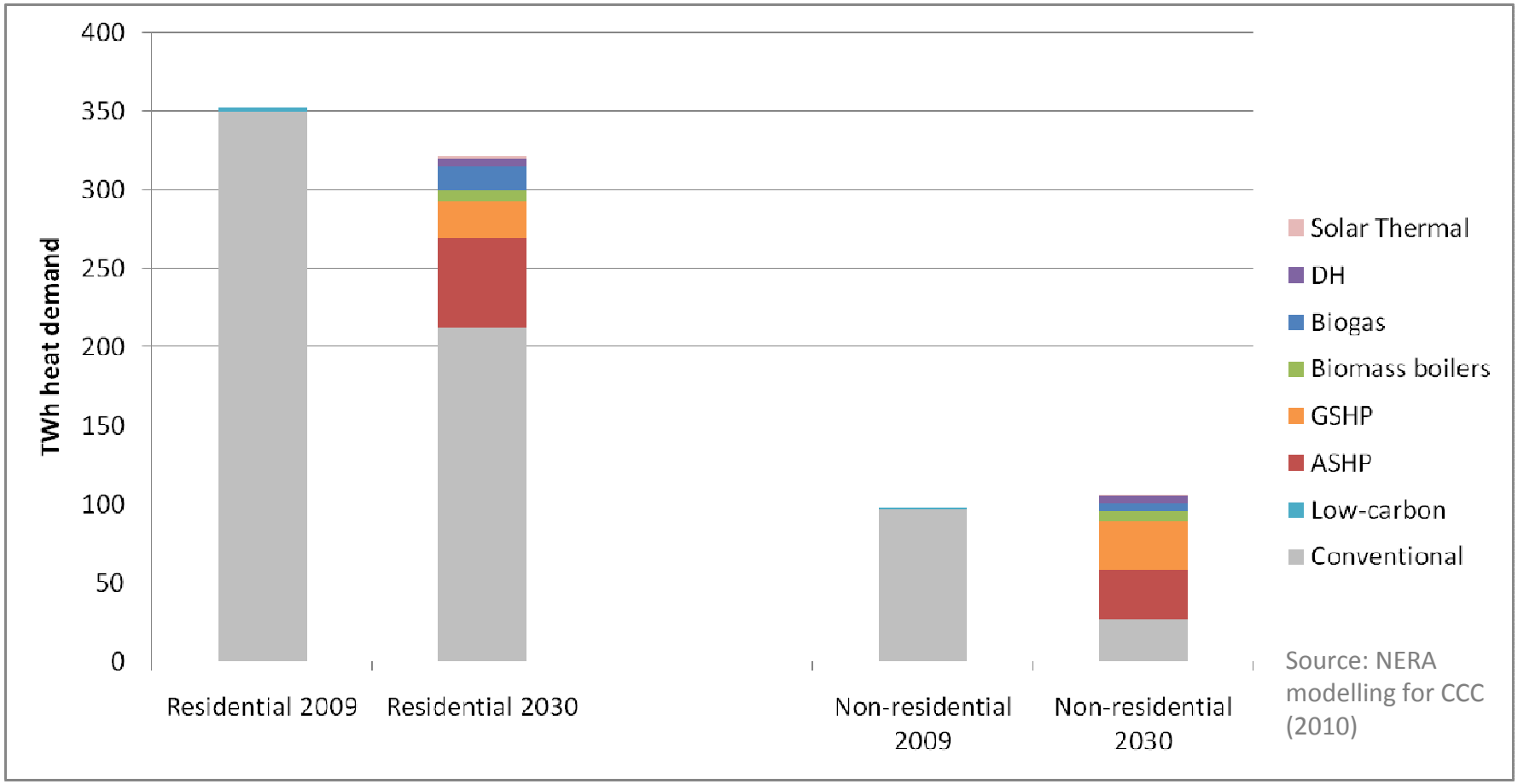
Power: New market arrangements needed to make investments bankable

Emissions intensity trajectory under current market arrangements compared to required path



Source: CCC based on modelling by Redpoint Energy and Pöyry Energy Consulting

Heat in buildings: majority still gas based in 2030



- Demand reductions from efficiency improvements, including 3.5 million solid walls by 2030 in residential buildings
- Low-carbon sources reach 33% of residential heat demand and 74% of non-residential heat demand in 2030

Summary of recommendations

- The UK's 2050 target of an 80% emissions reduction remains appropriate.
- Early power sector decarbonisation is key to achieving 2050 target; this remains the case in a shale gas world.
- Costs and impacts of power sector decarbonisation are manageable; legal commitments made through the fourth carbon budget.
- Important role for unabated gas in power generation (but declining load factors), gas CCS, heat in buildings and industry.
- Key policies are EMR (CfDs, capacity mechanism) and CCS demonstration.