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Carbon Budgets, Rebounds and Efficiency Gains

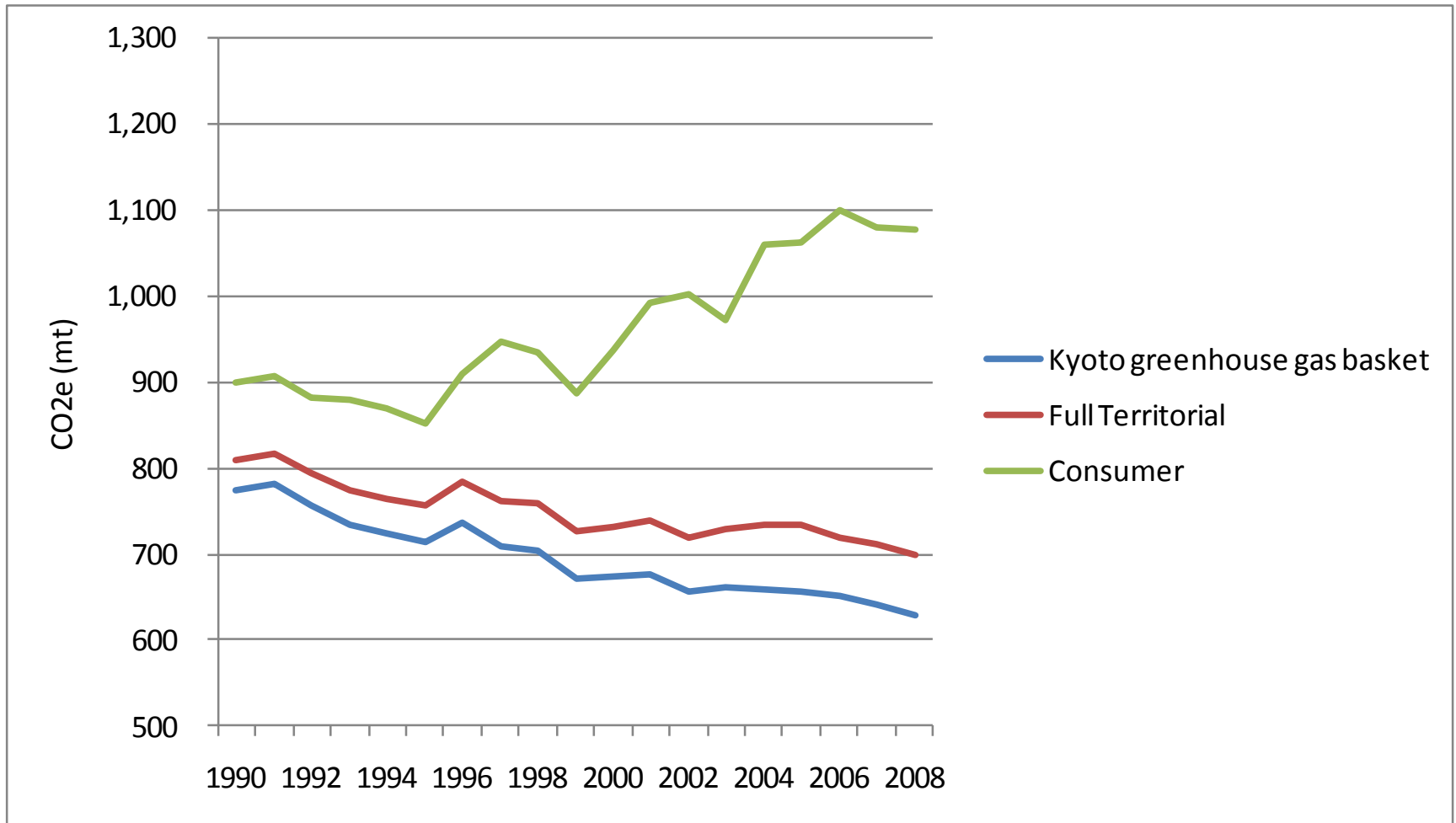
Prof. John Barrett
University of Leeds

Some slides from Steve Sorrell (University of Sussex)

UK Territorial and Consumer Emissions



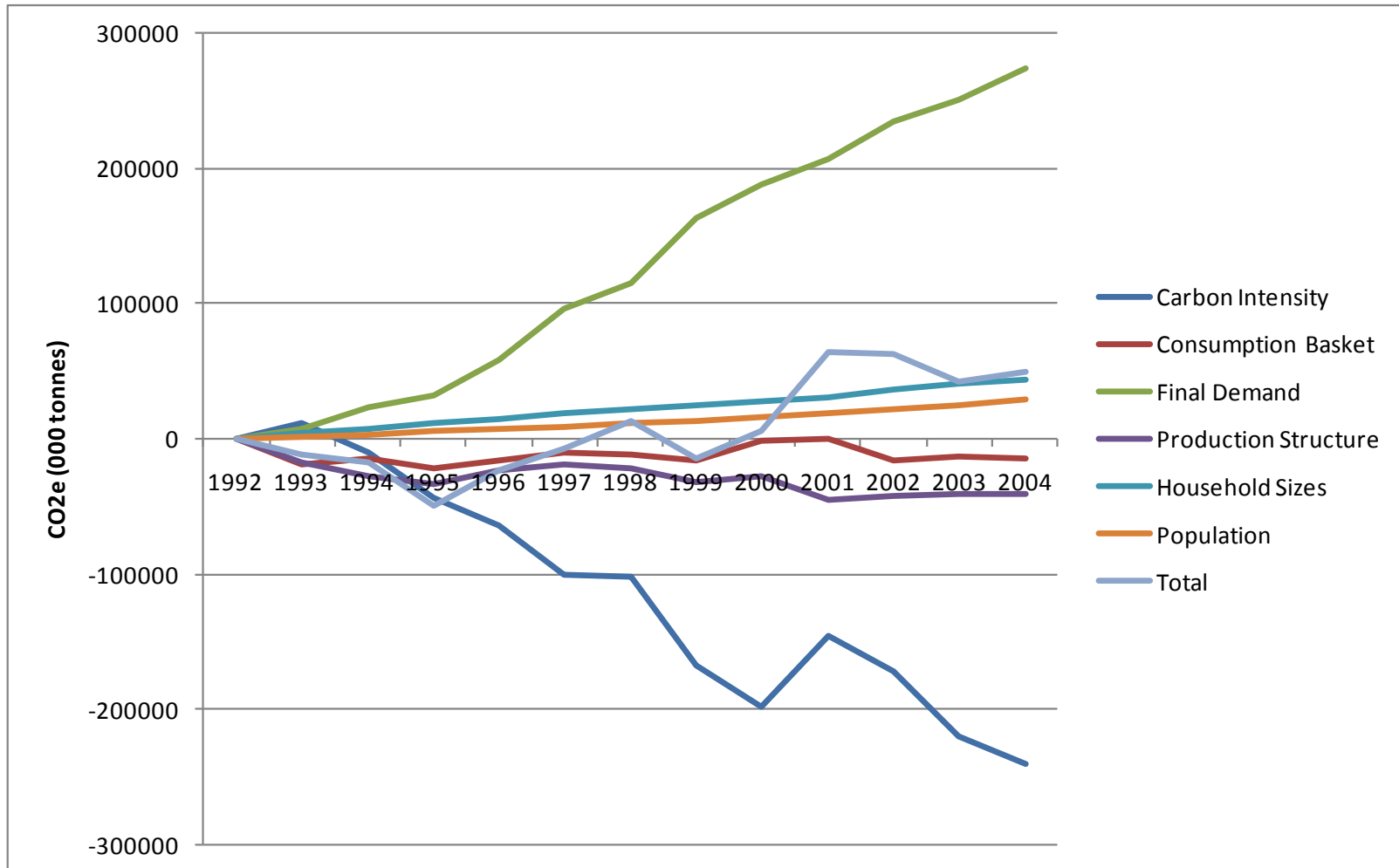
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Drivers of GHG Emissions



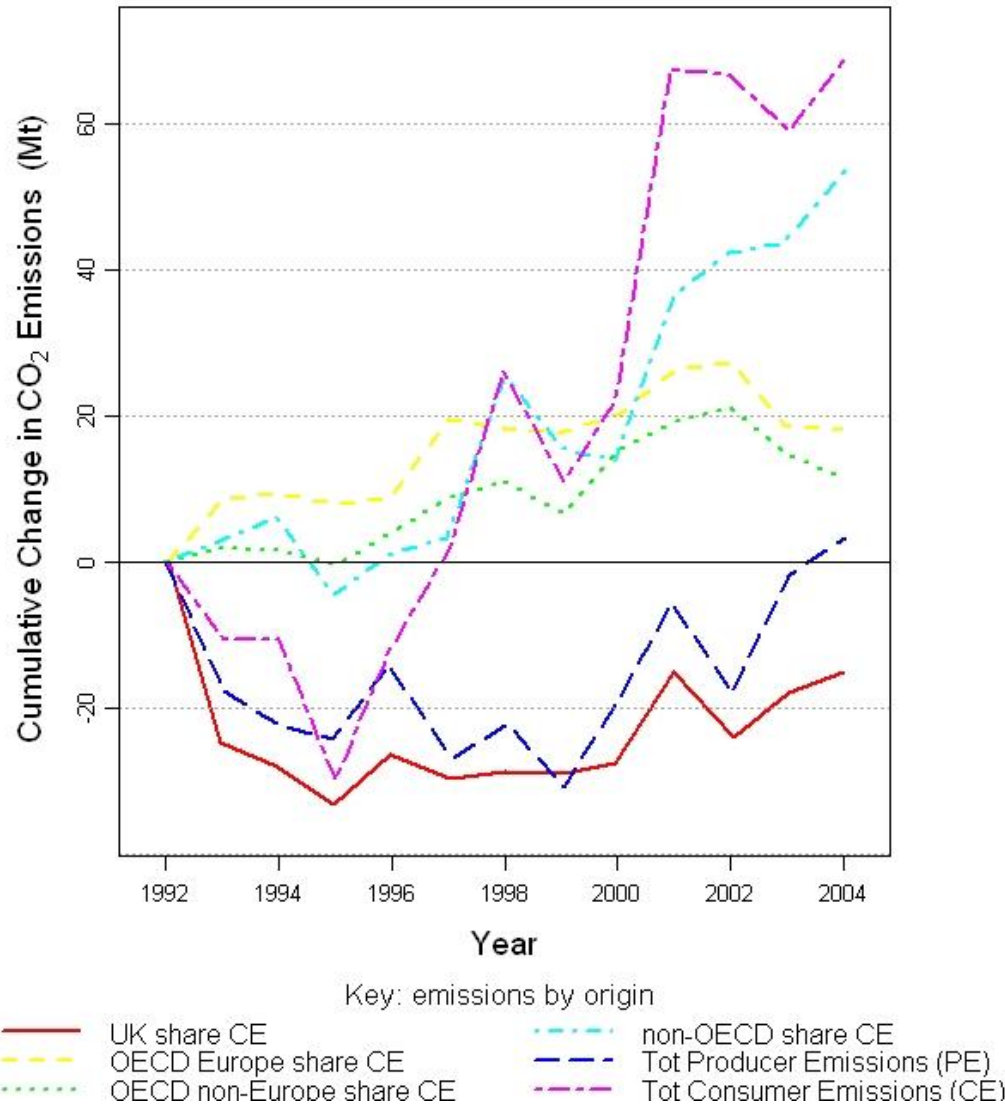
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Emissions by Location



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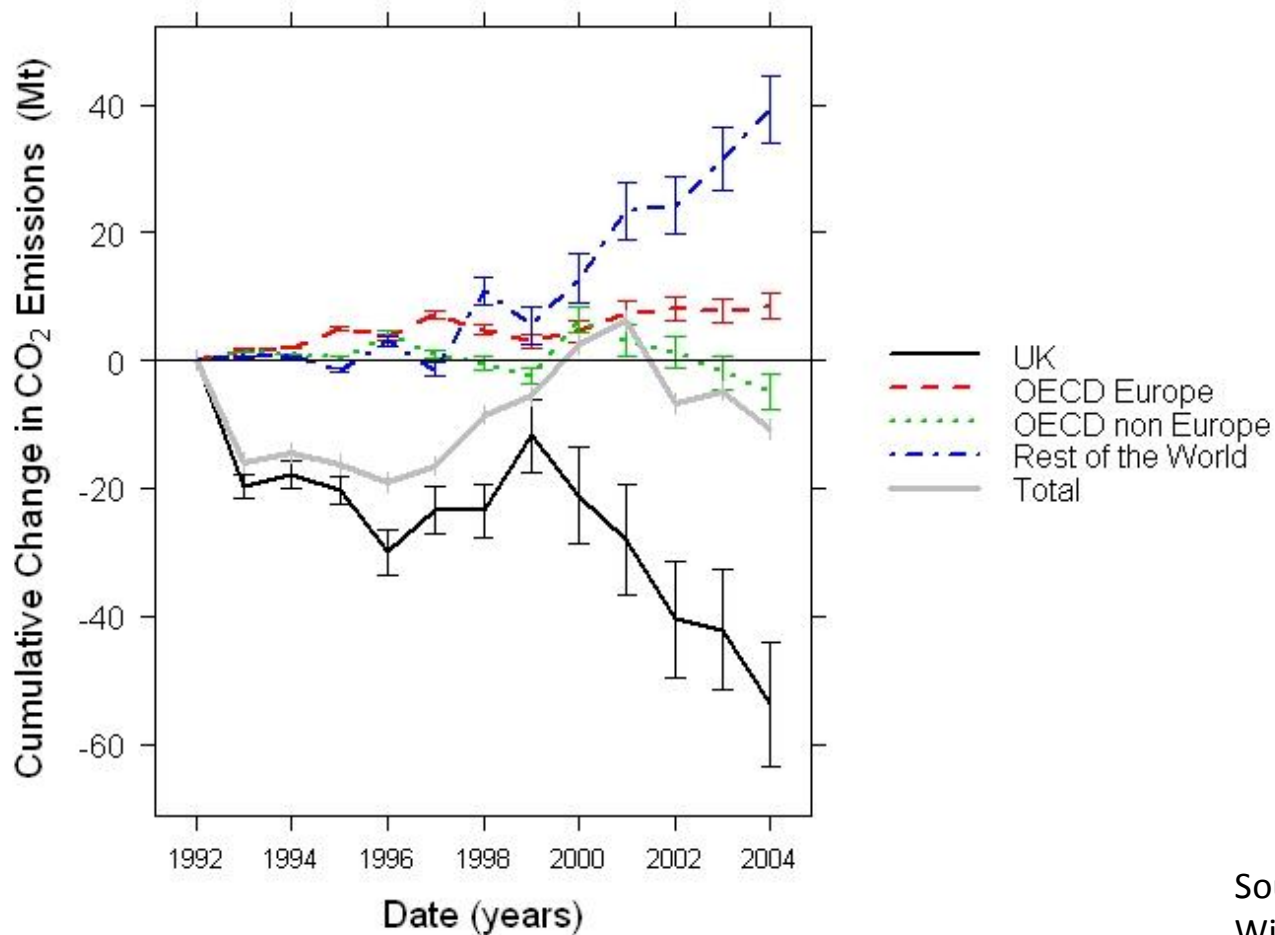


Source: Minx, Baiocchi, Wiedmann, Barrett, (2009)

Structural Economic Changes



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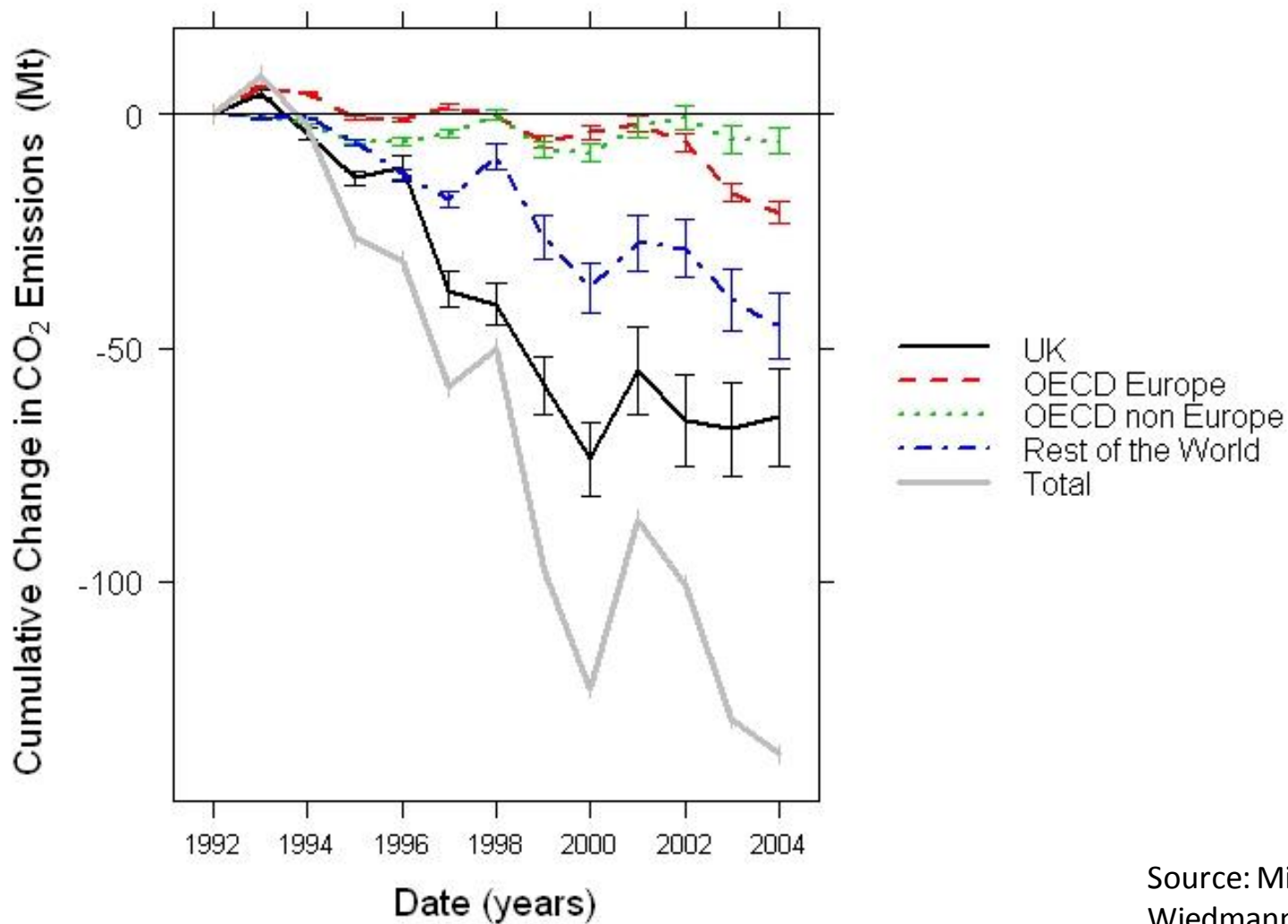


Source: Minx, Baiocchi, Wiedmann, Barrett, (2009)

Carbon Intensity Changes



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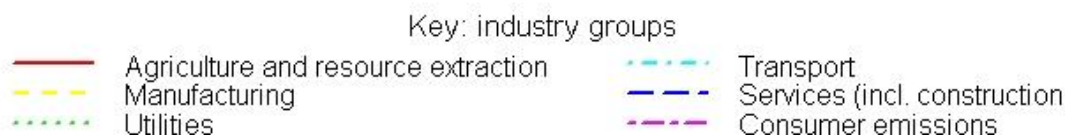
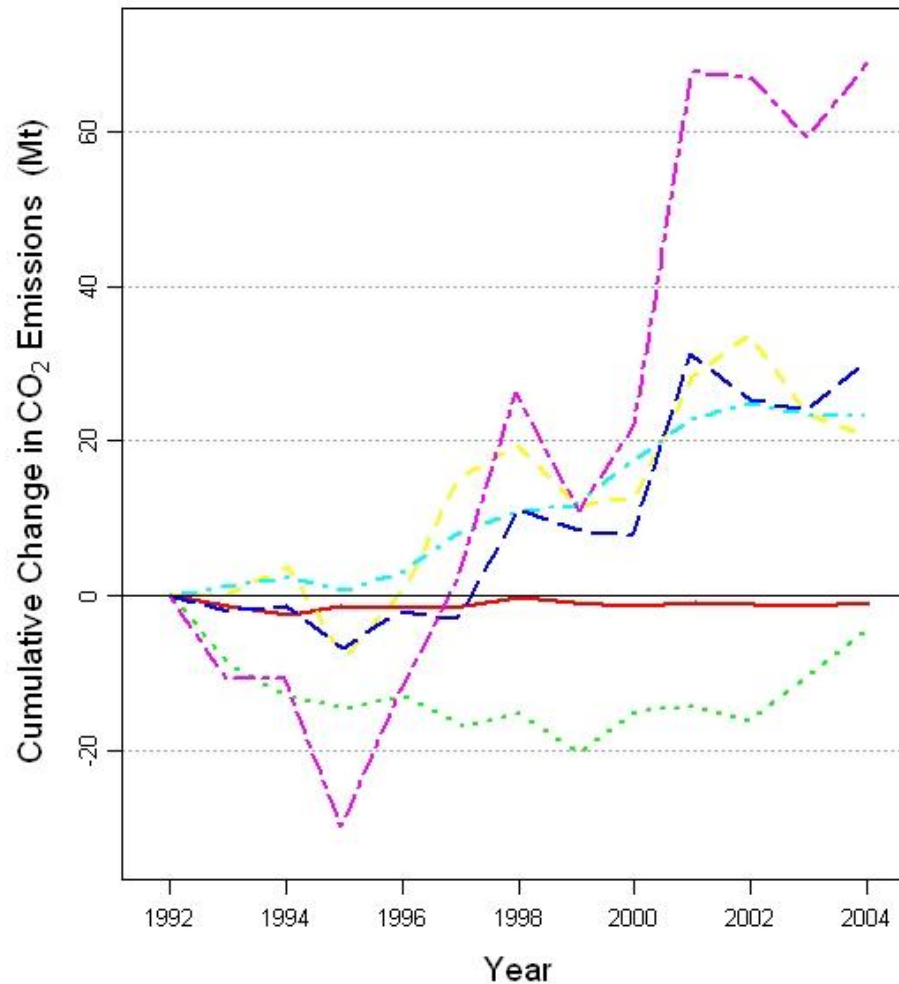


Source: Minx, Baiocchi, Wiedmann, Barrett, (2009)

Change by Sectors



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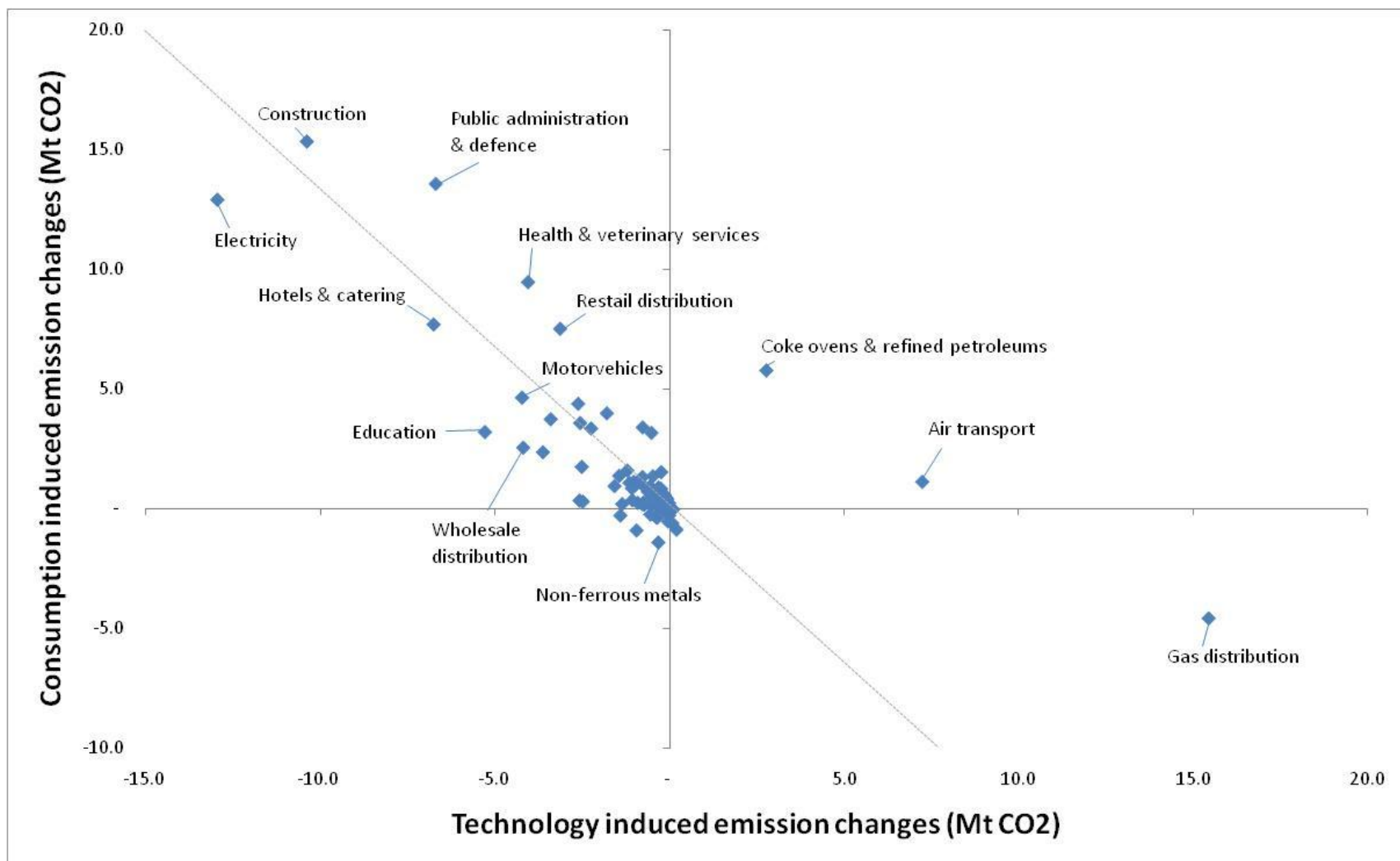


Source: Minx, Baiocchi, Wiedmann, Barrett, (2009)

Technology and Demand Changes



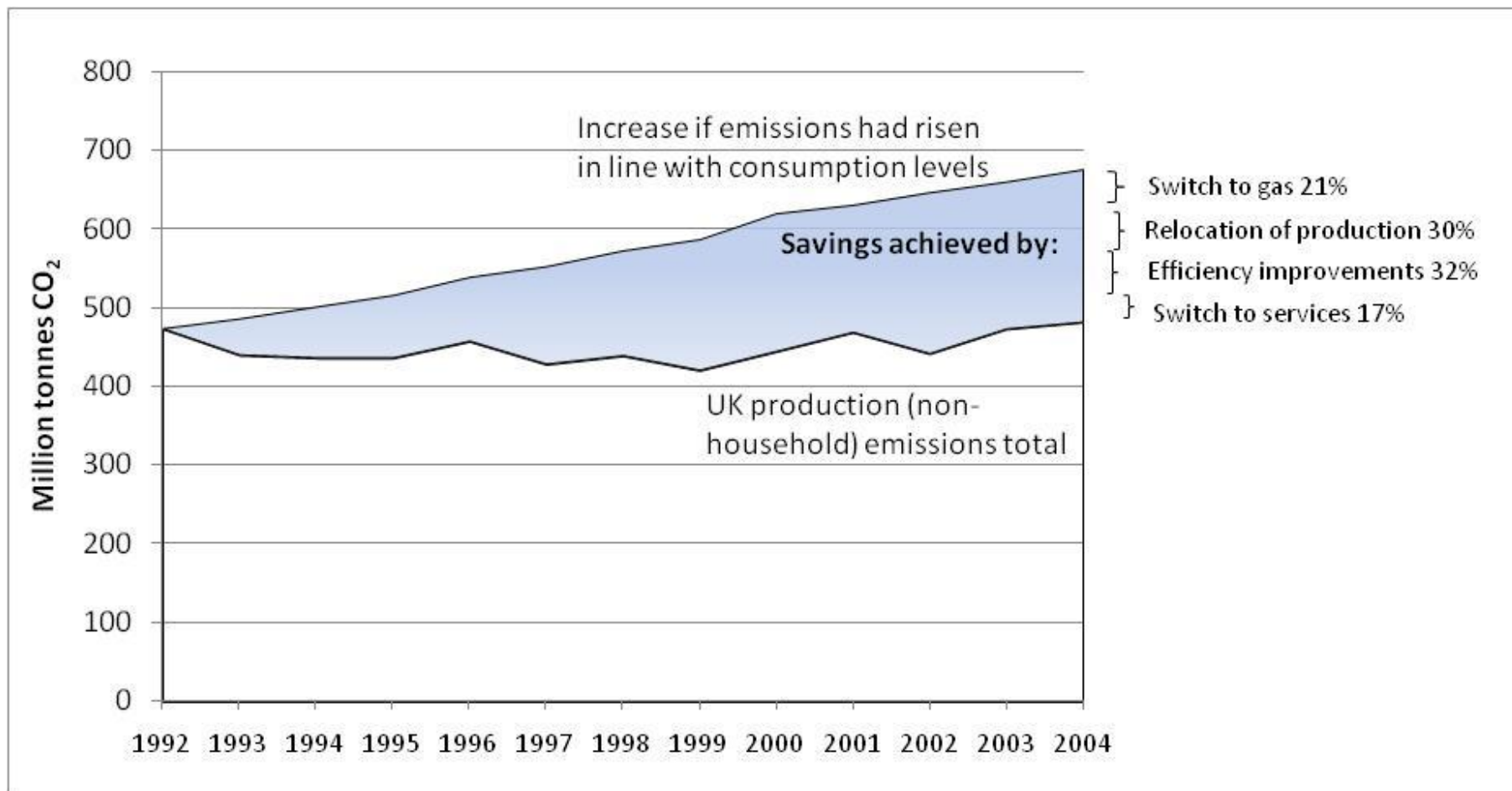
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Policy Effectiveness



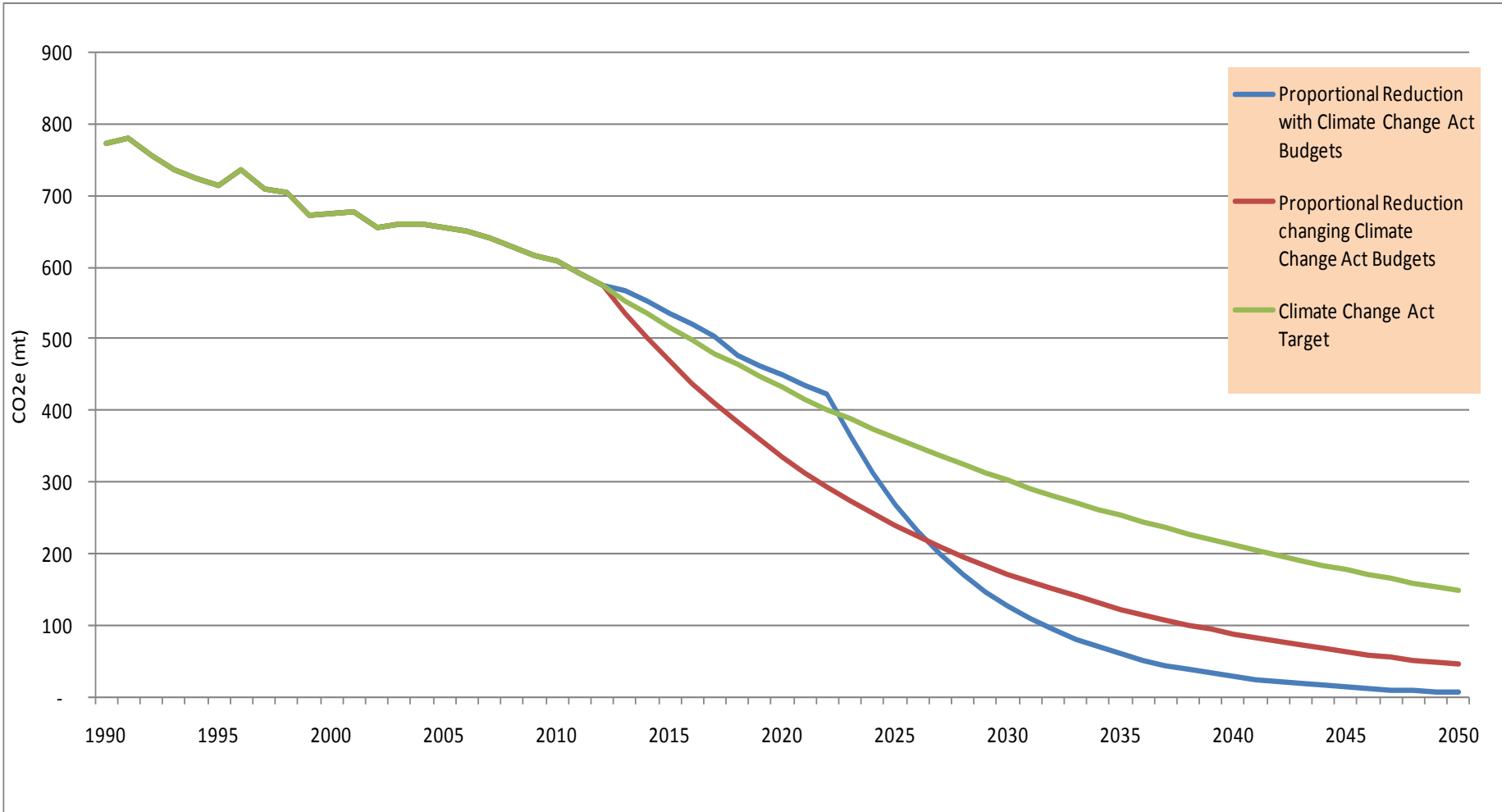
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What should the UK Budget be?



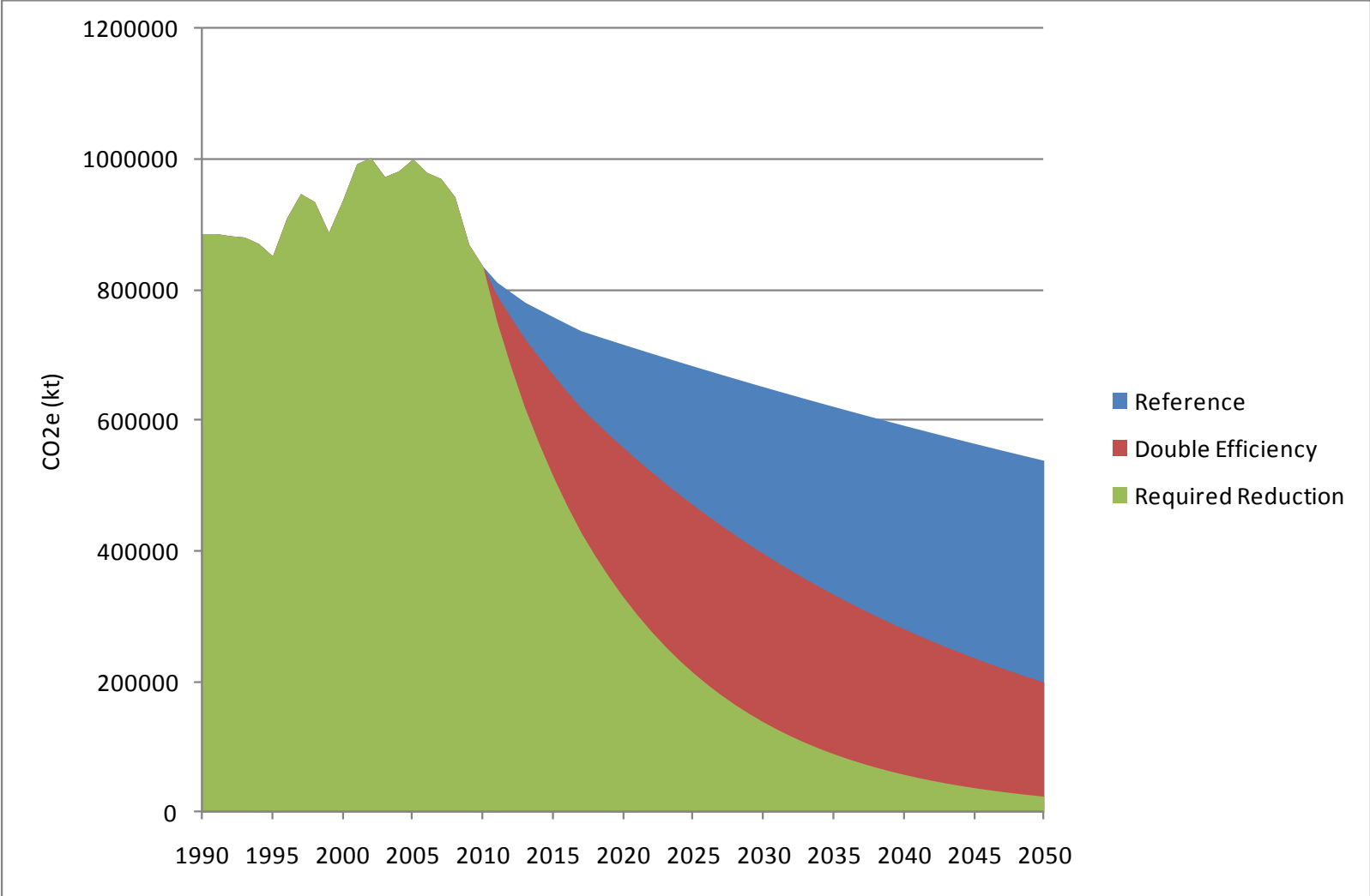
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Global Carbon Budgets



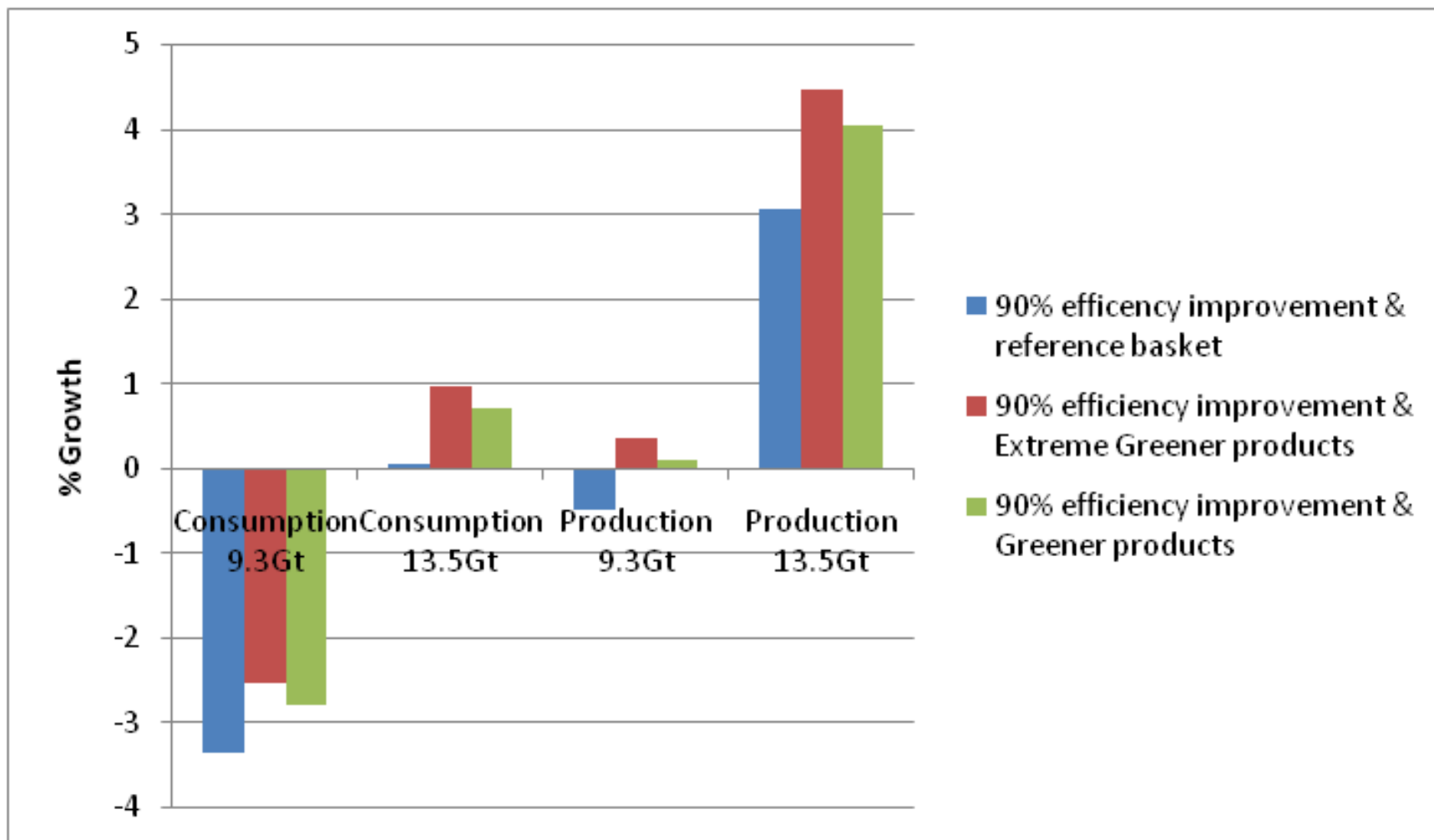
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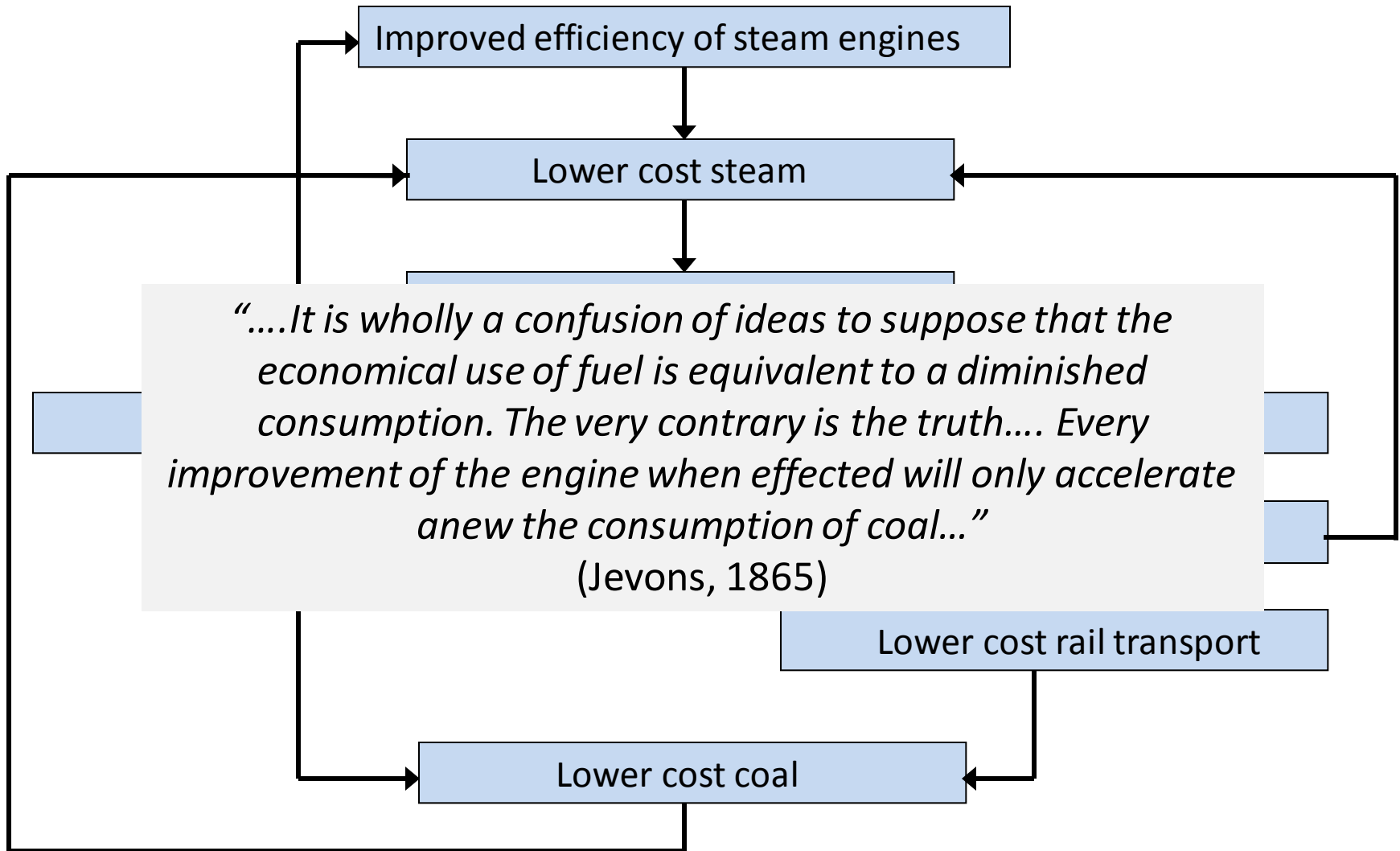
Global Carbon Budgets



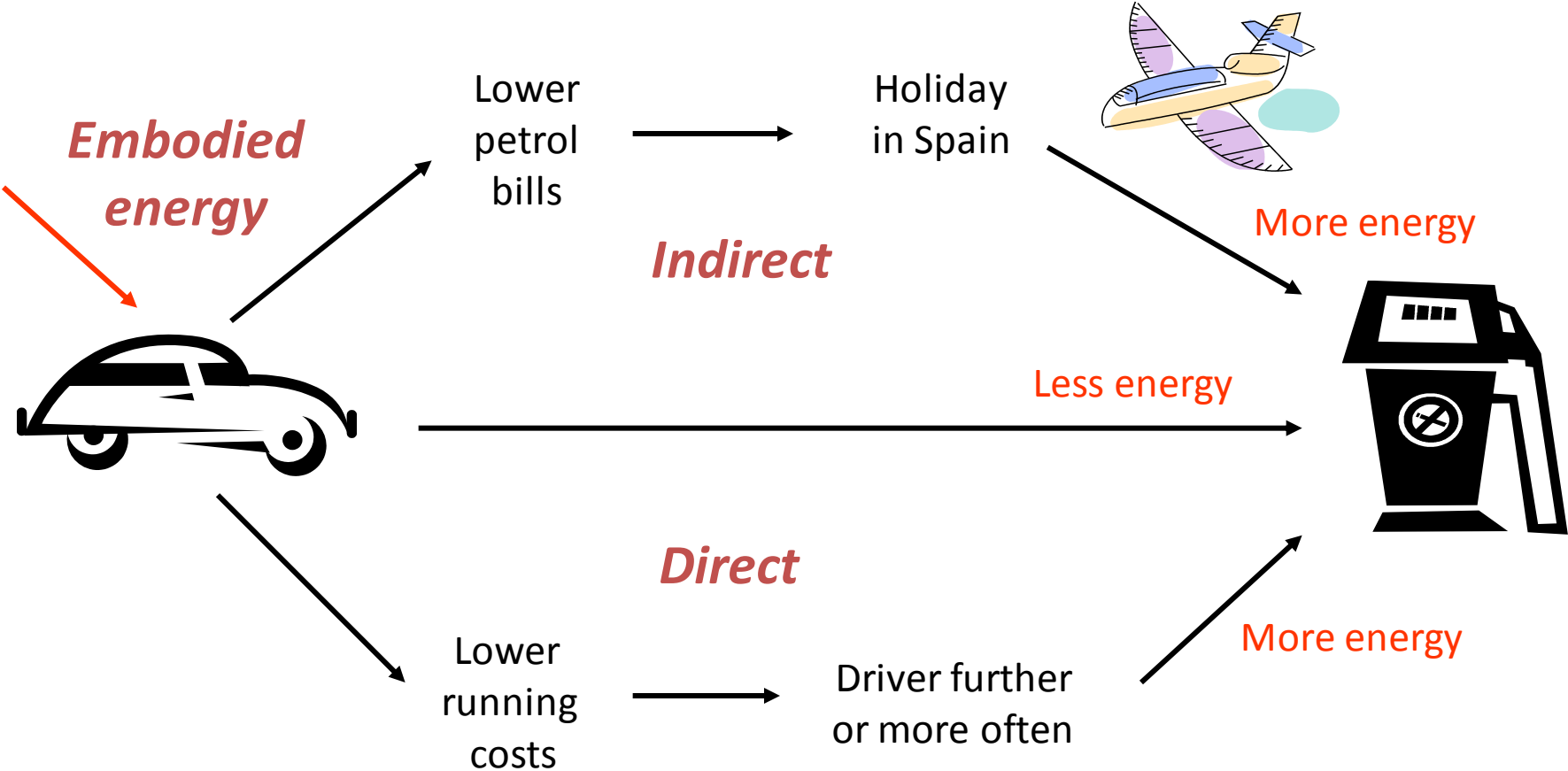
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Jevons' Paradox

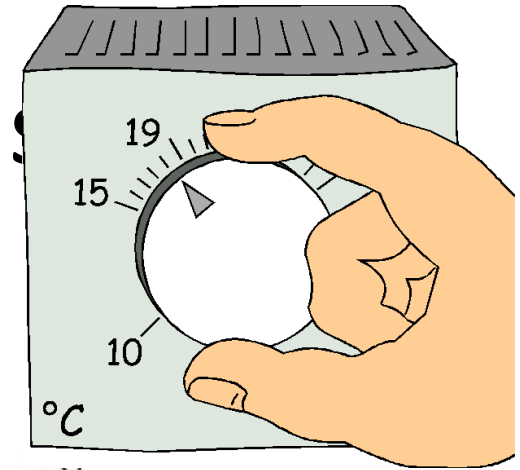


Rebound effects - households

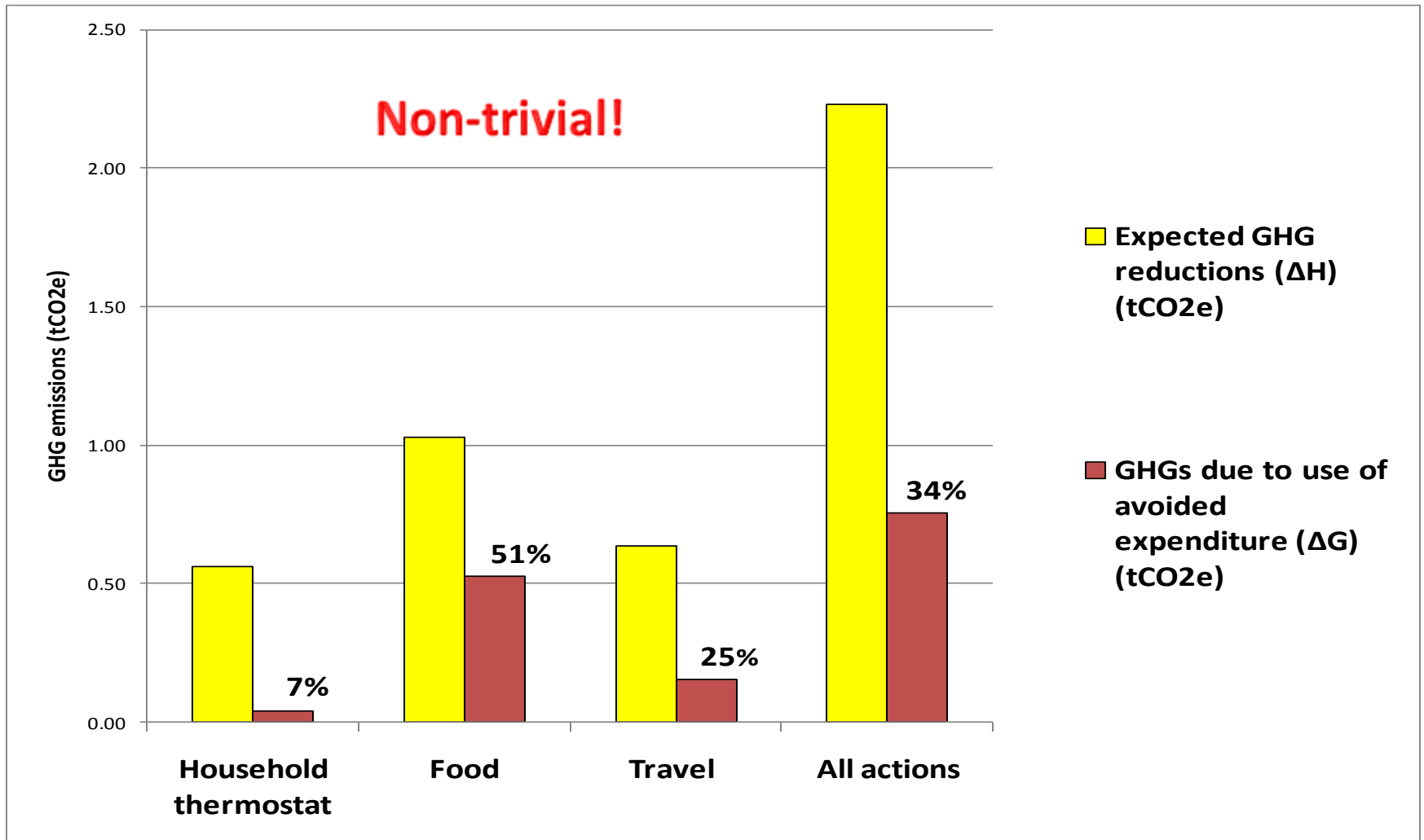


Simple 'sufficiency' actions

- **Household heating:** reduce thermostat by 1°C (10%)
- **Food:** reduce food waste by one third (33%)
- **Transport:** replace car journeys <2miles by walking/cycling (23%).



Estimated rebound effects





- Learning from the past
- Economic Growth incompatible with deep cuts in emissions
- Not reflected in any country's climate policy