Committee on Climate Change

The UK's Climate Change Act: implications for surface transport

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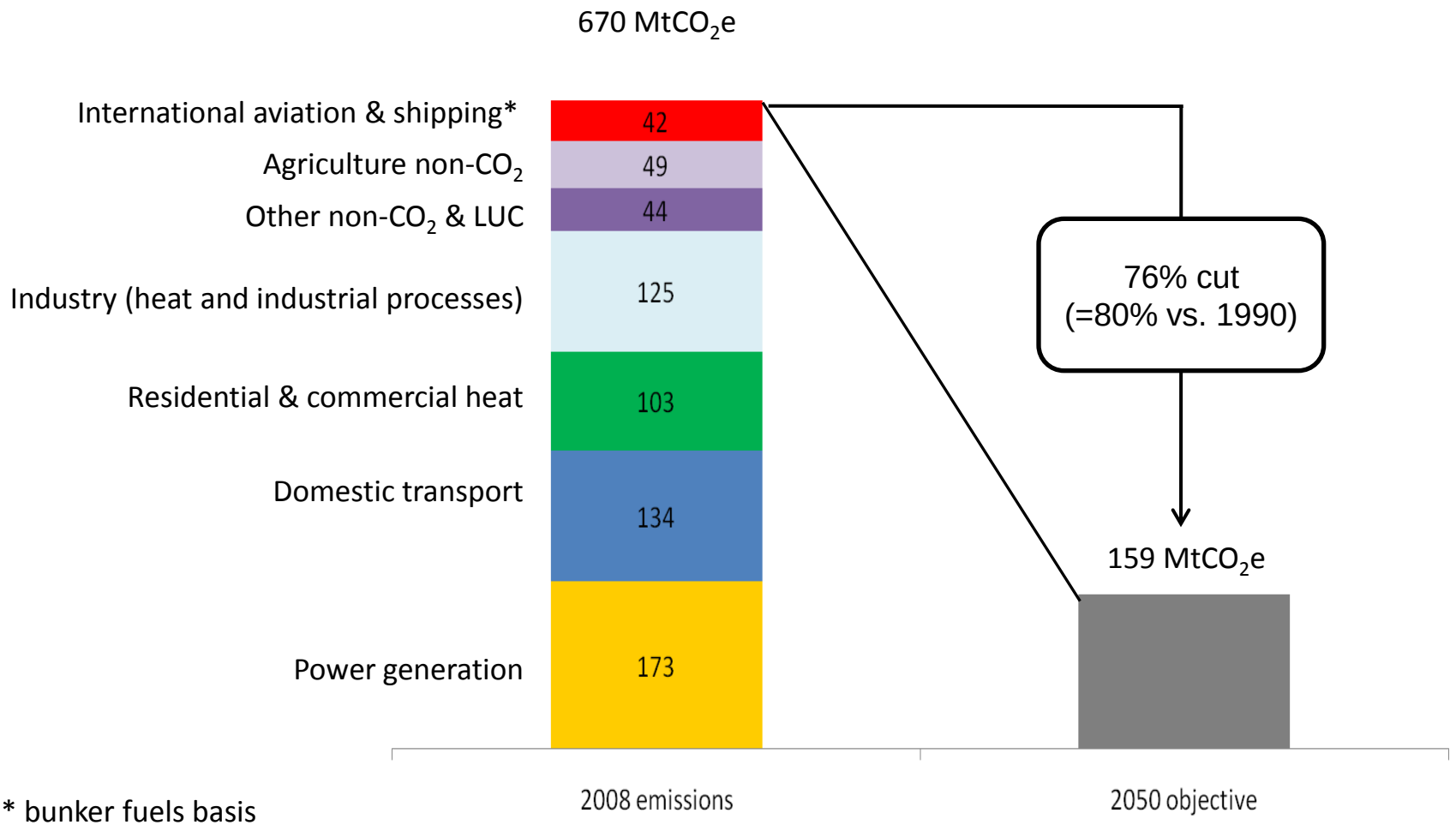
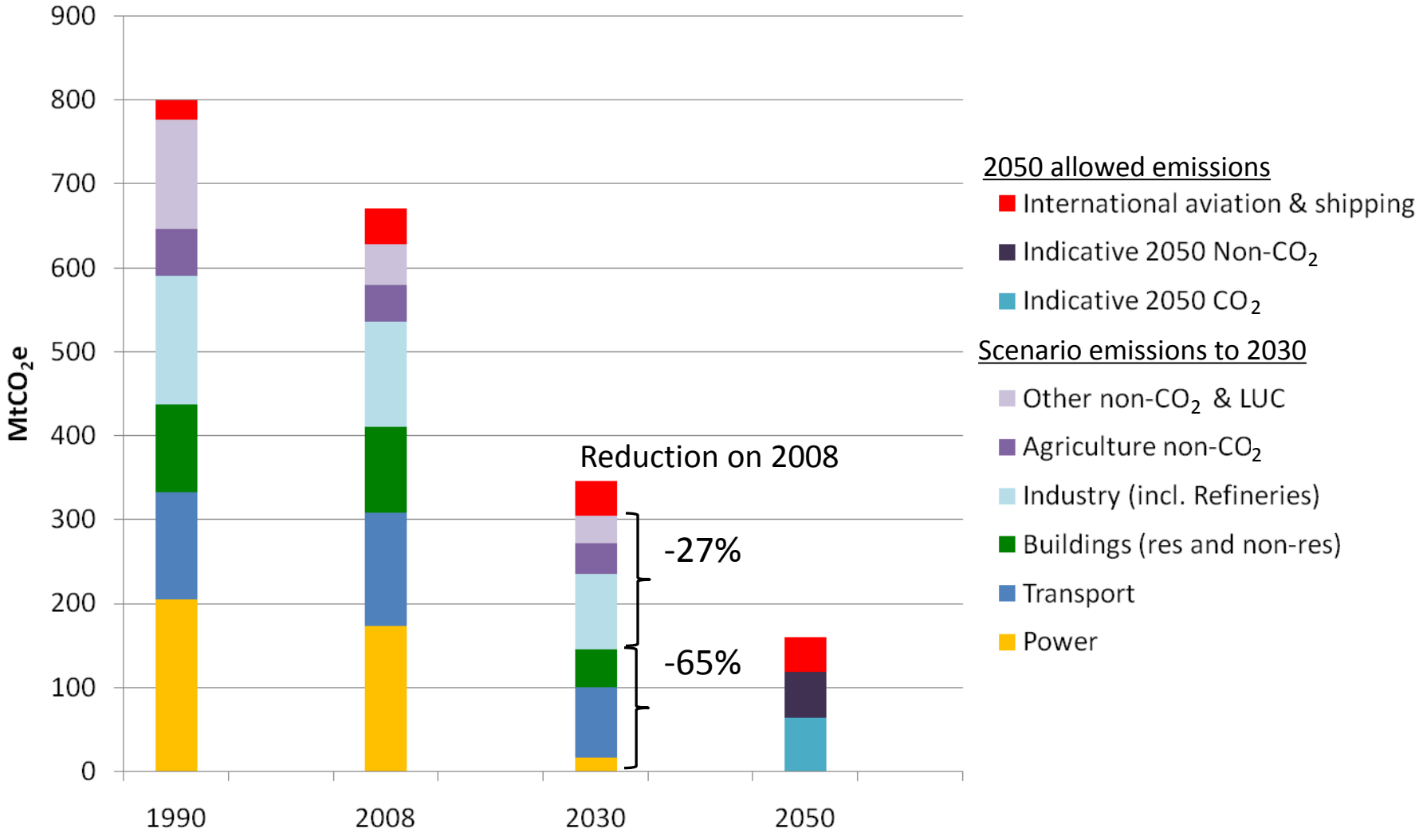
The UK's 2050 target

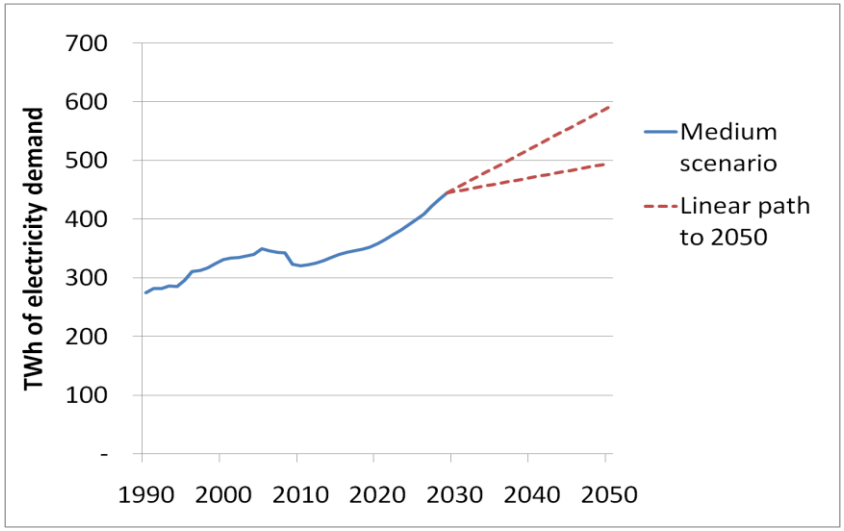


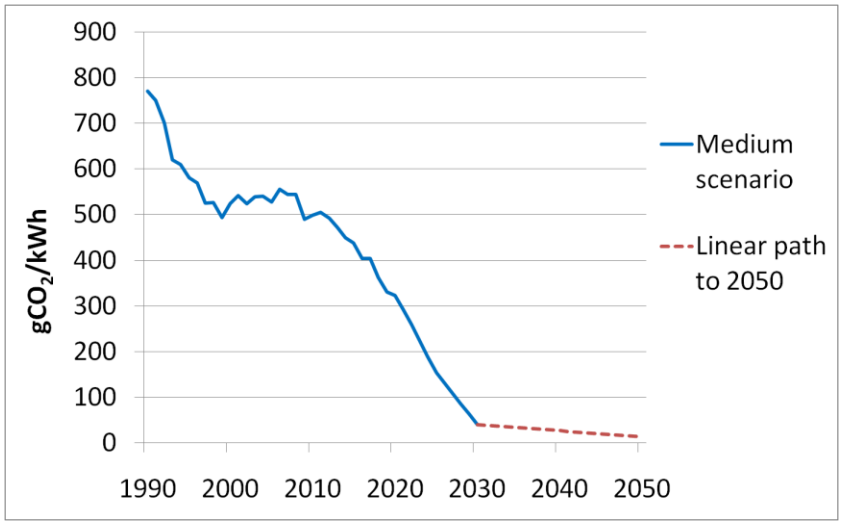
* bunker fuels basis

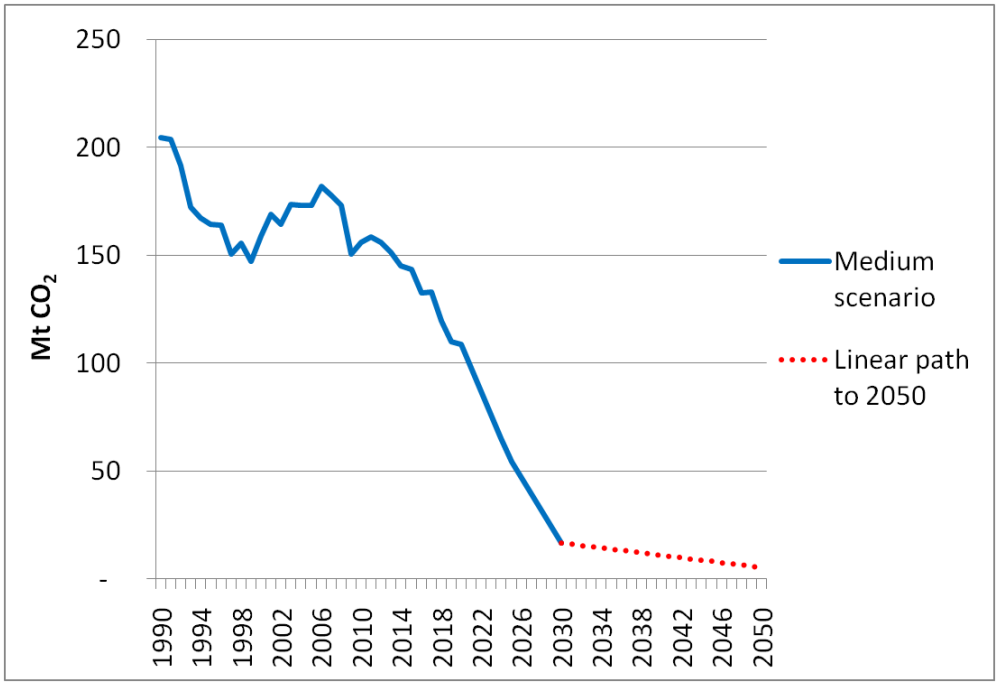
We have developed a feasible and cost-effective planning scenario for 2030 that is compatible with the 2050 target



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



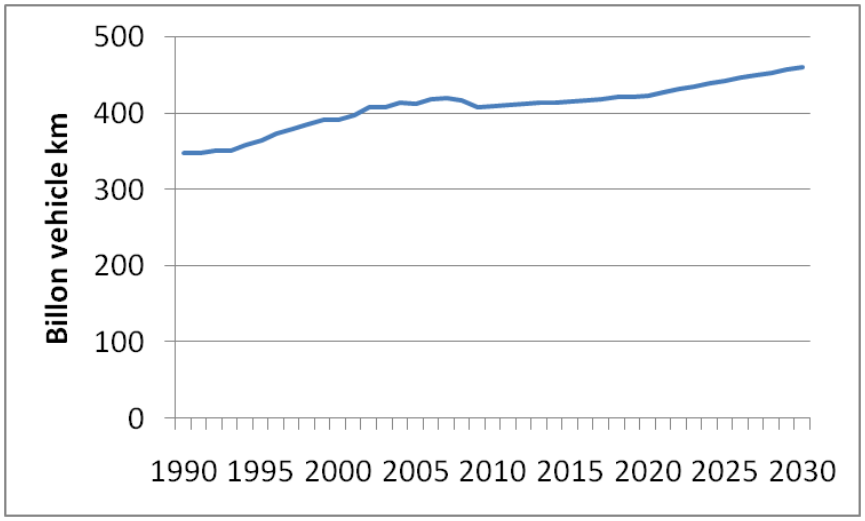




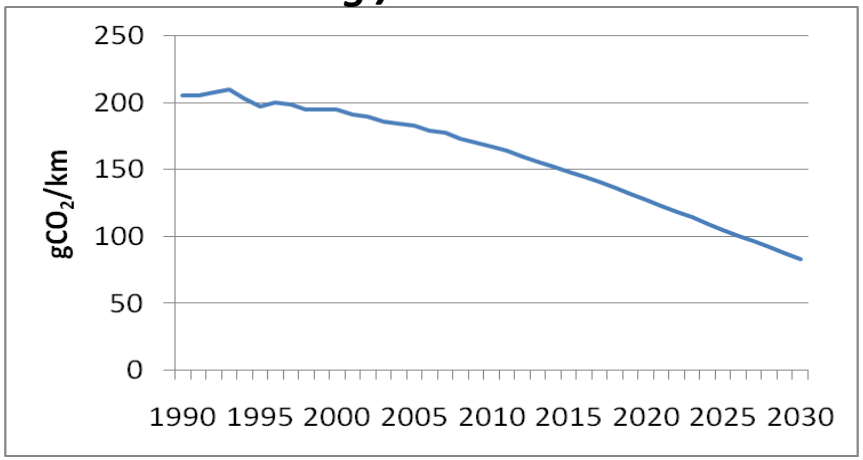
Source for 2050: range of MARKAL model runs for CCC (2010)

Transport: Emissions reduction will come from reducing g/km, while km likely to increase

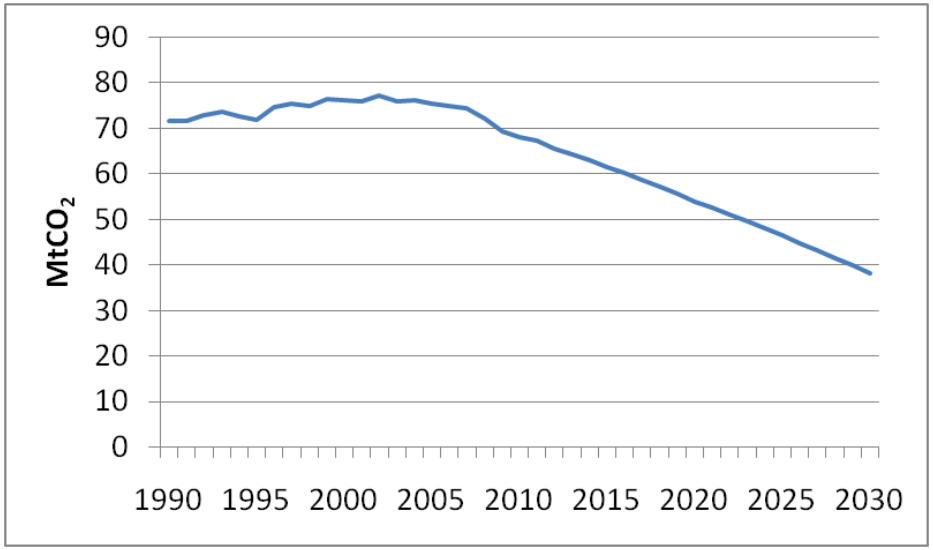
Car km



Car g / km



Car emissions



Vans: 17% emissions reduction to 2030

HGVs: 33% emissions reduction to 2030

Transport: Low-carbon vehicles need to be 60% of new sales in 2030

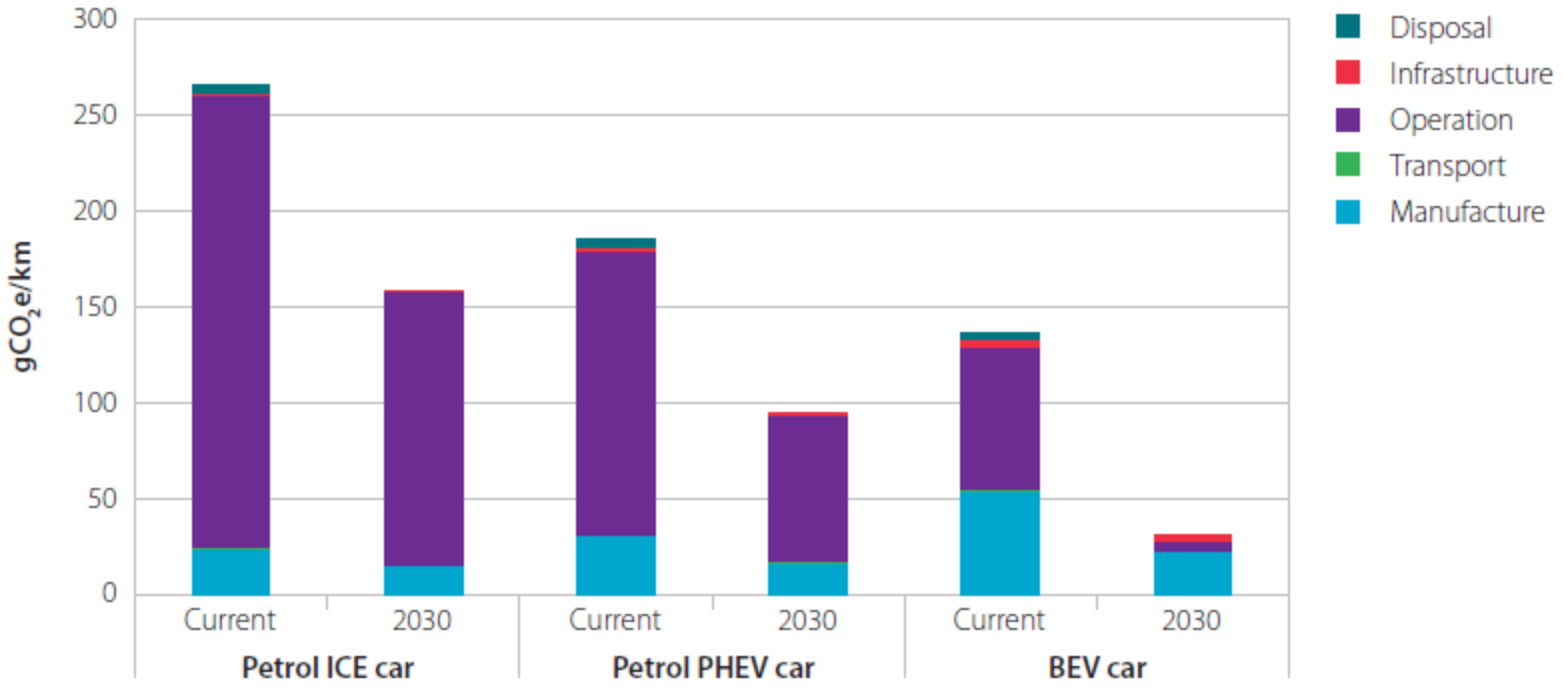
	2030		
	Share of new car sales	Share of miles	Emissions Intensity
Conventional cars	40%	70%	80-125 g/km
Plug-in hybrids	40%	20%	50 g/km
Pure electric vehicles	20%	10%	0 g/km

Average emissions intensity in 2030

New cars purchased: 52g/km (versus 150g/km today)

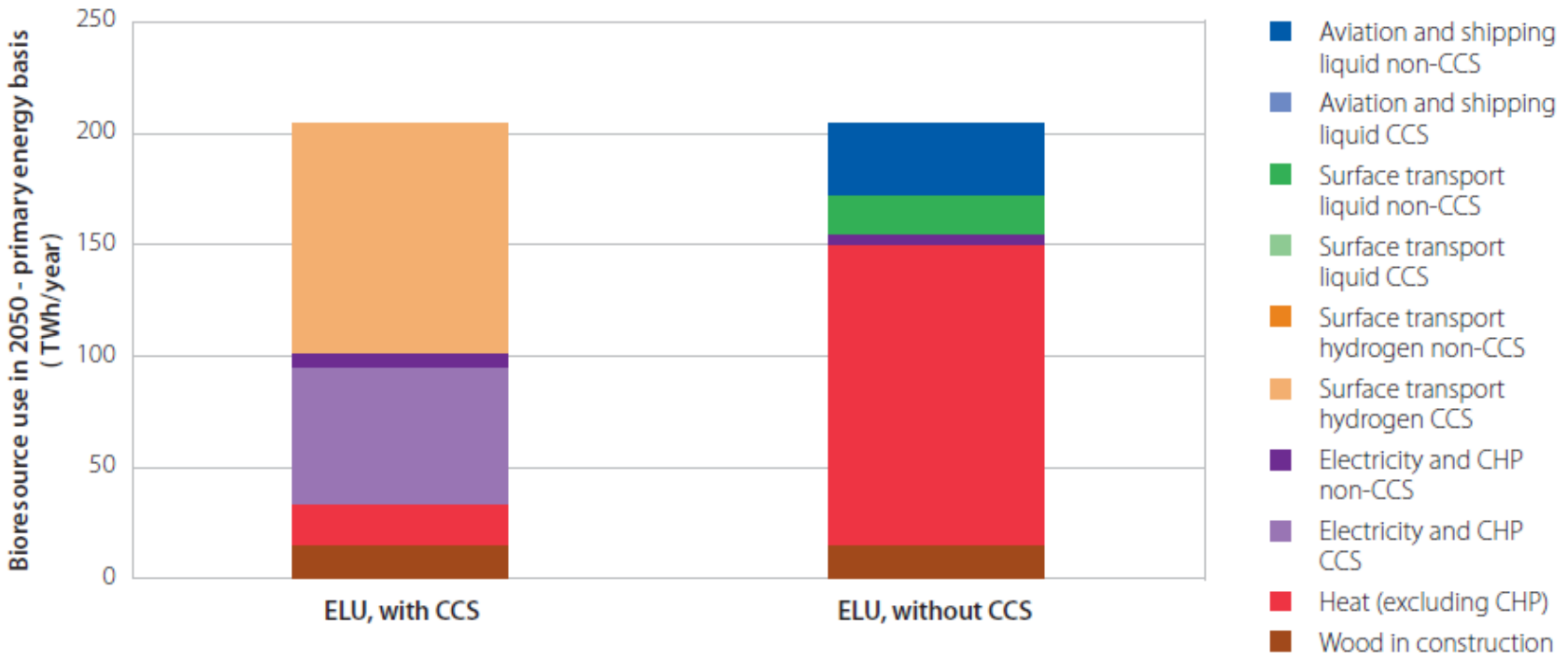
All cars on road: 81 g/km (versus 173 g/km today)

Lifecycle emissions of vehicle technologies



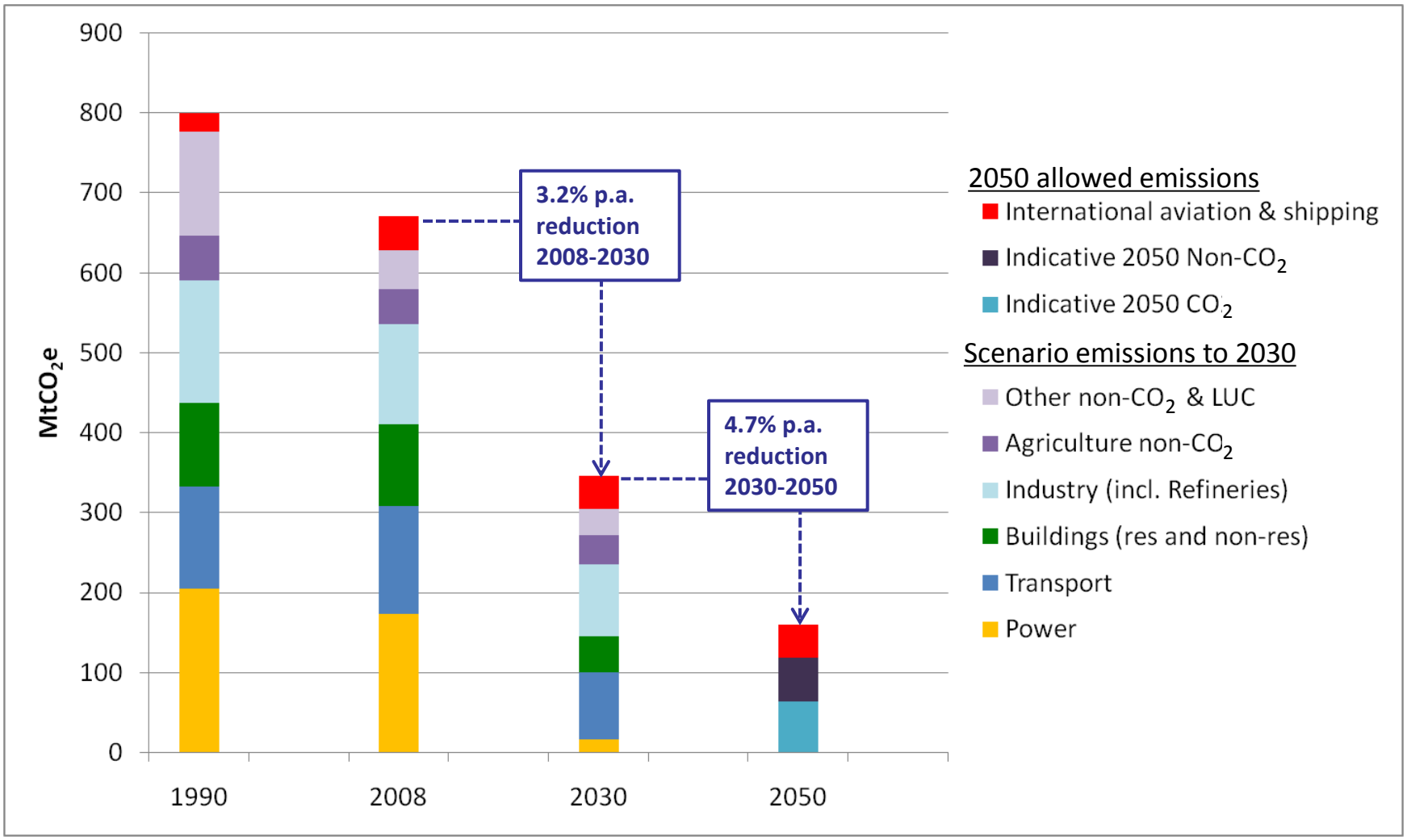
Source: CCC analysis based on estimates developed by Ricardo-AEA.
Notes: Base scenario. Reflects power sector decarbonisation over vehicle lifetimes. Assumes biofuels at their 2012 average levels for public refuelling stations.

Bioresource use in 2050 in scenarios with and without CCS

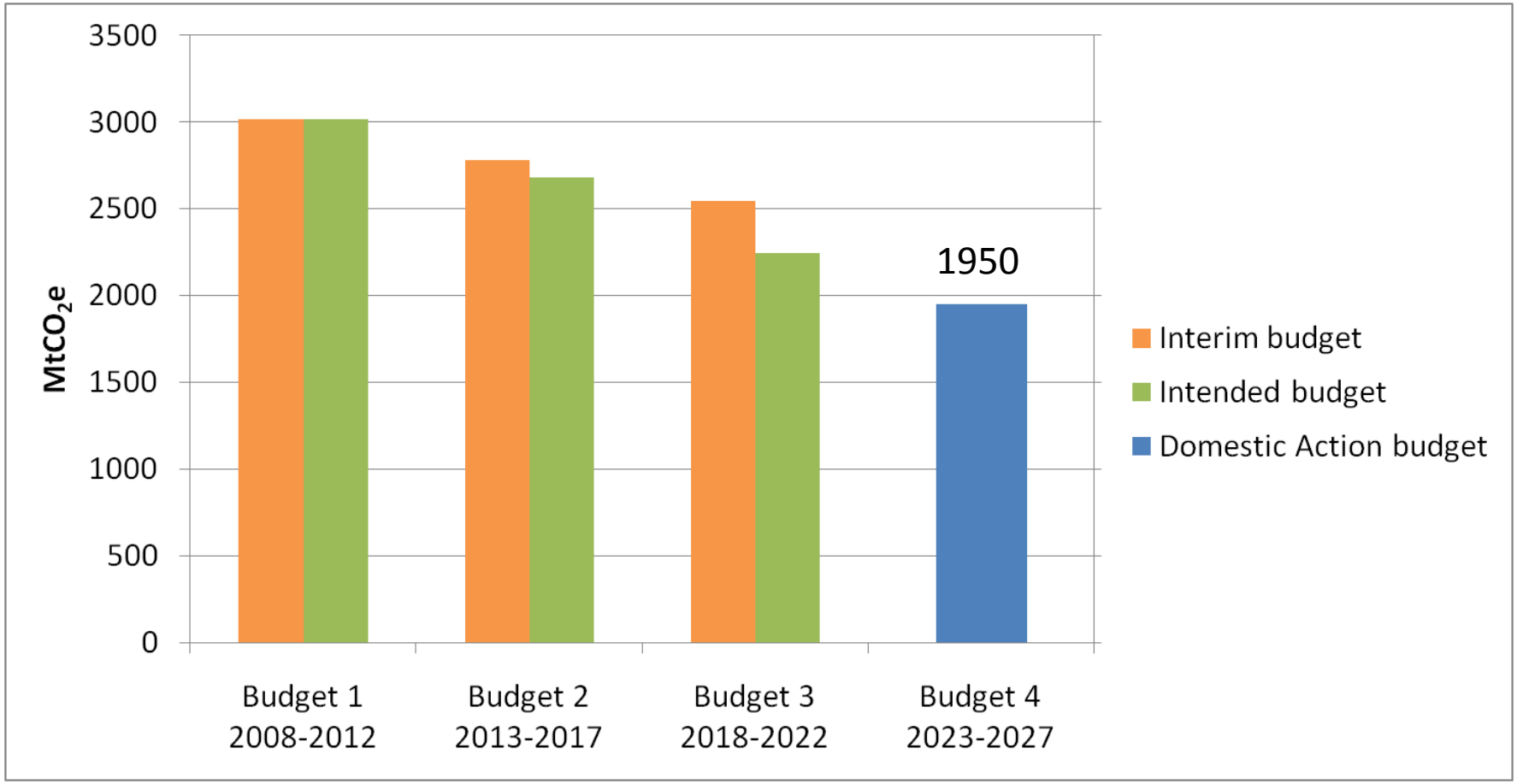


Source: CCC modelling, using model developed by Redpoint Energy and Ecofys.
Note: Extended Land Use scenario. In these results, power and hydrogen production with CCS are selected. In practice however, a range of CCS applications may be appropriate, with the balance dependent on relative technology performance and economics (see Box 4.2). This could result in a higher penetration of aviation and shipping biofuels if these are produced with CCS.

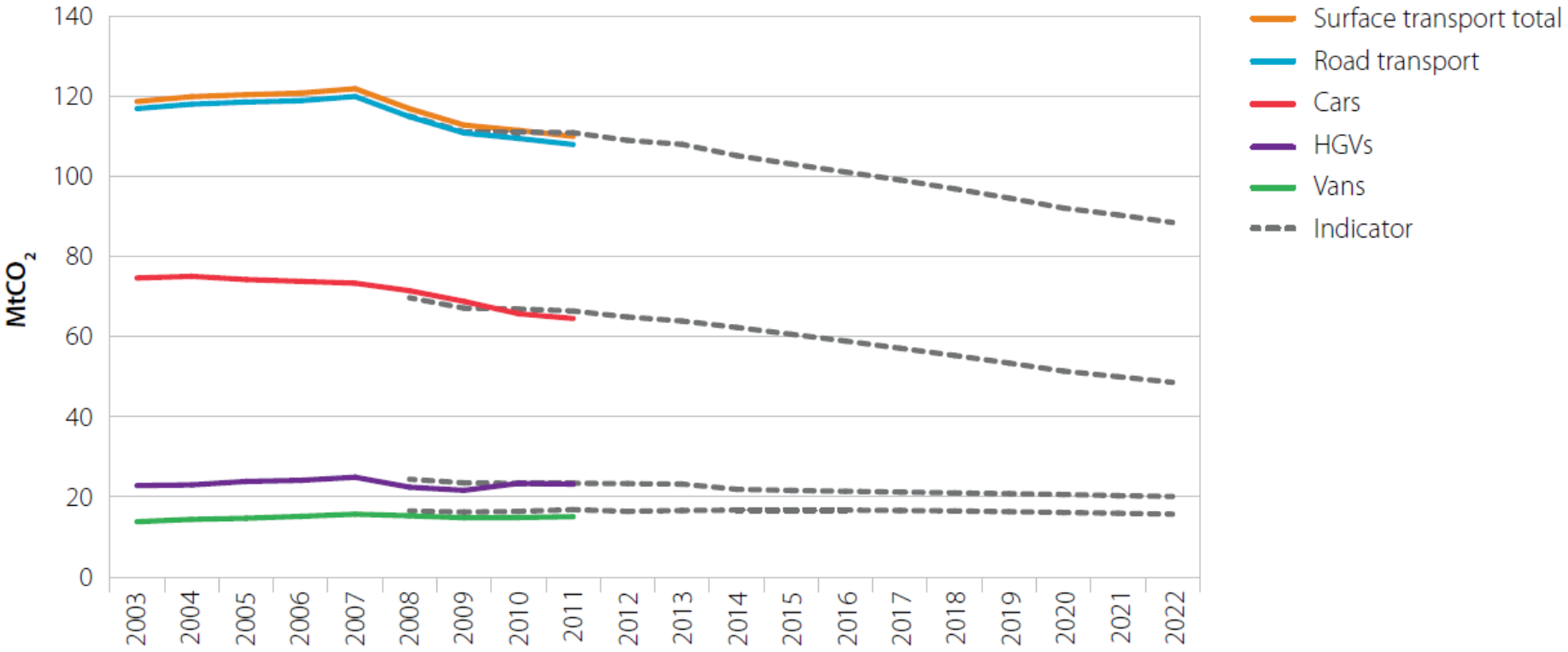
Emissions reductions will have to accelerate again from 2030 to 2050



Interim, Intended and Domestic Action budgets



Surface transport emissions fell by 1.3% in 2011. NAEI estimates suggest that within this, emissions from vans increased, while those from cars and HGVs fell.



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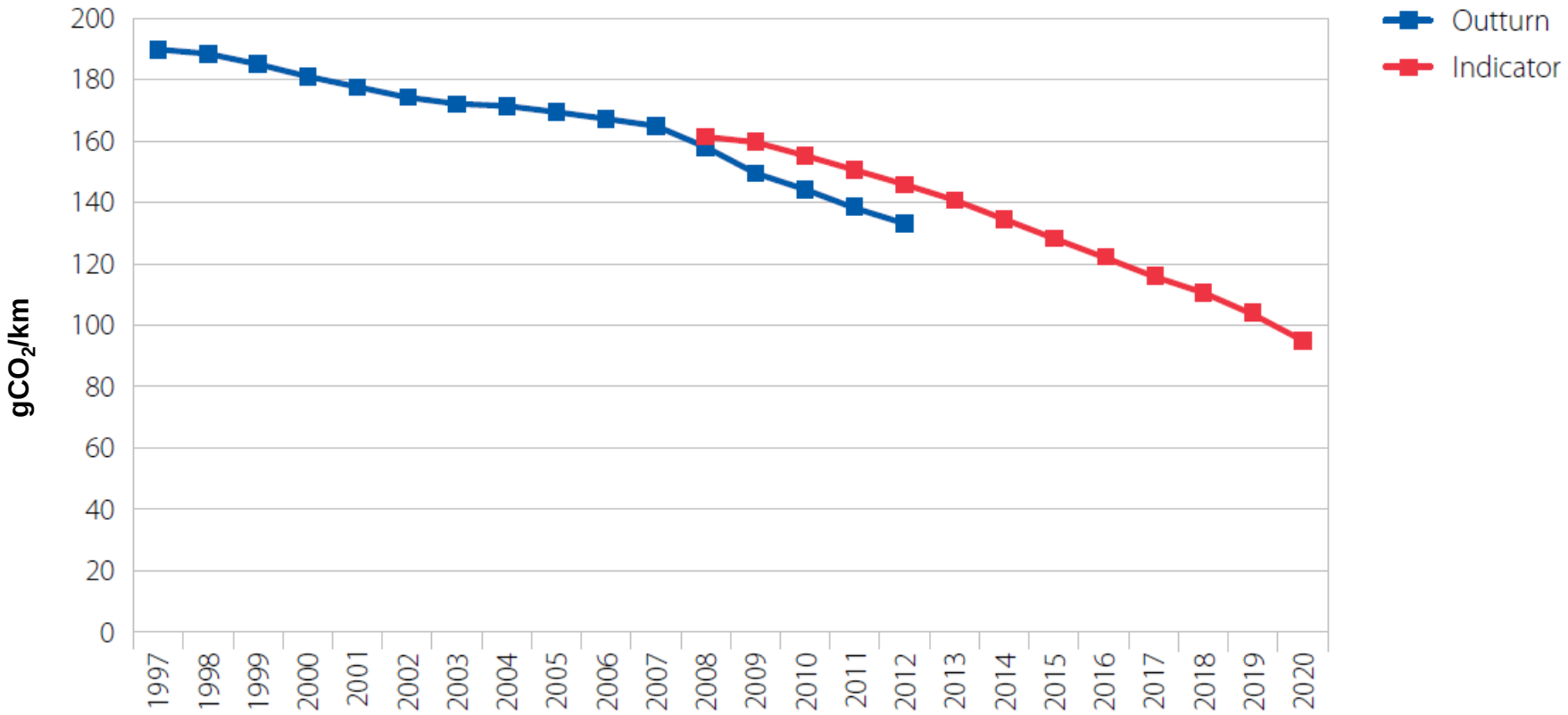
New car CO_2 fell 3.6% to 133 gCO_2/km in 2012



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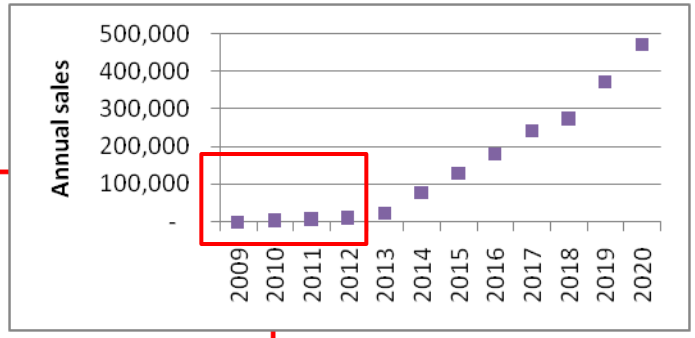
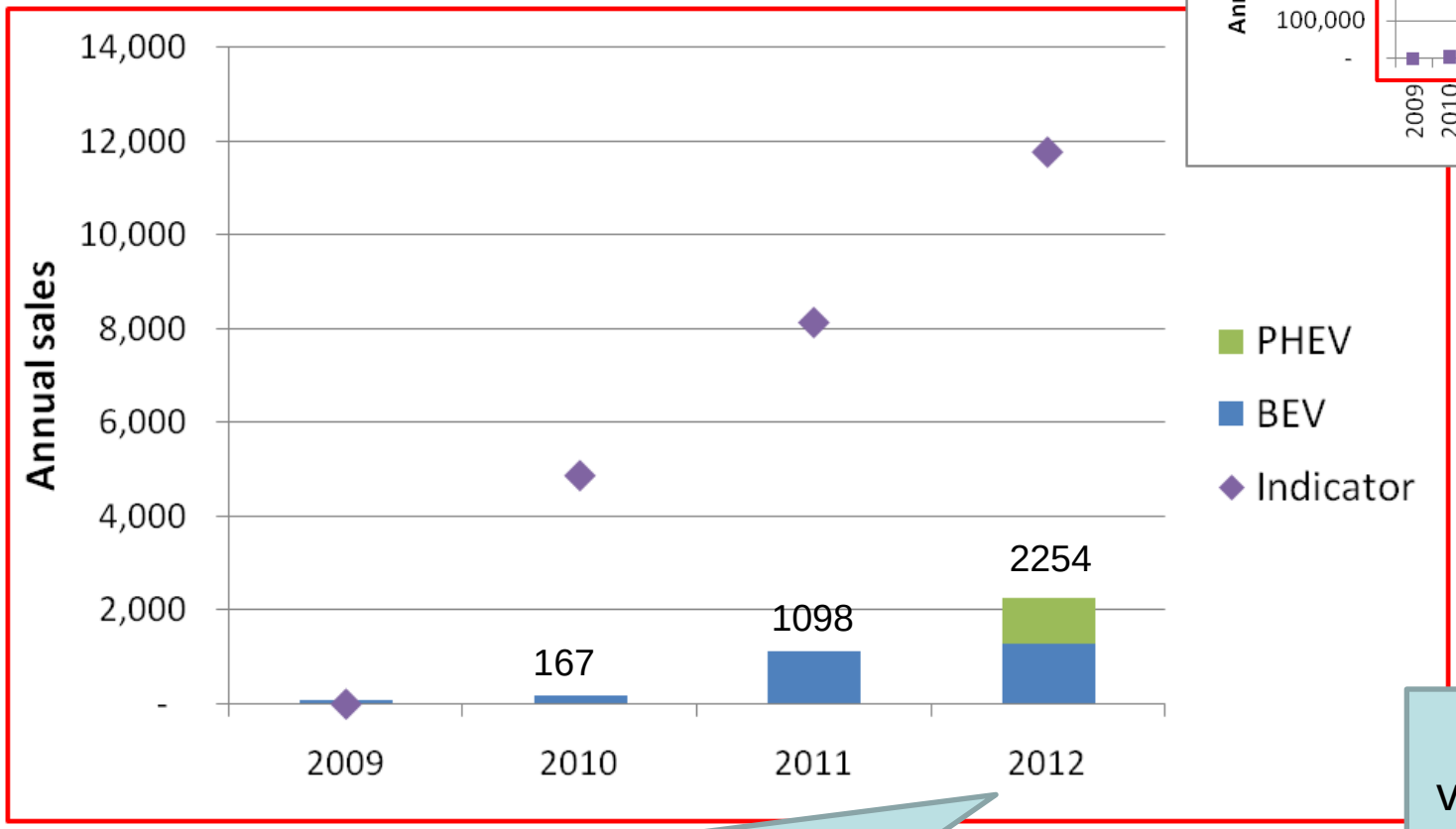
Sales of electric cars more than doubled in 2012, corresponding to availability of PHEVs, but remain low relative to volumes required

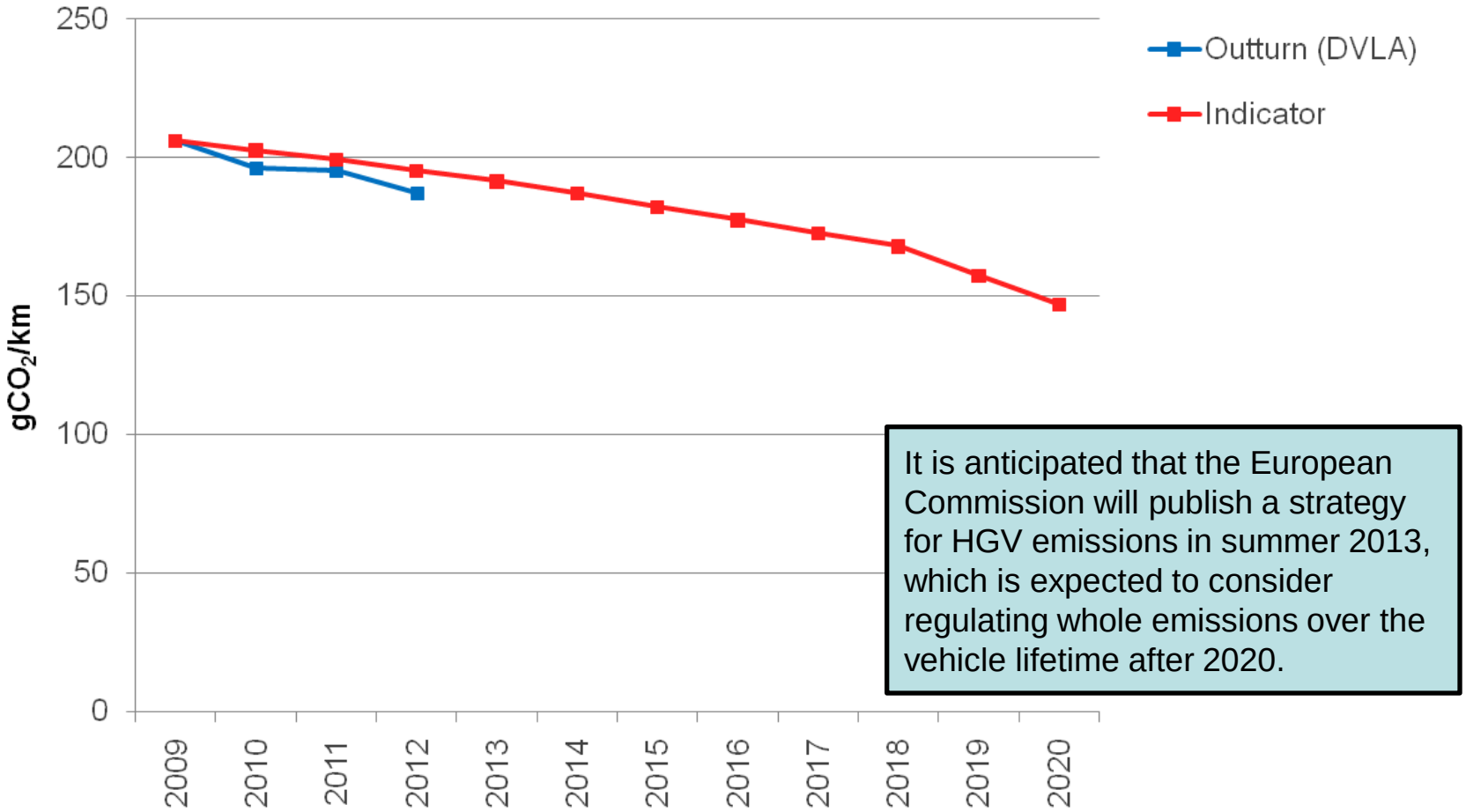




+ 215 electric vans sold in 2012

10 car models on the market in 2012 (7 BEVs + 3 PHEVs)... with 24 more expected soon (inc 13 PHEVs in 2013/14)

New van CO_2 fell 4.1% to 187 gCO_2/km in 2012



It is anticipated that the European Commission will publish a strategy for HGV emissions in summer 2013, which is expected to consider regulating whole emissions over the vehicle lifetime after 2020.

Note: SMMT publish an alternative estimate from 2011 onwards

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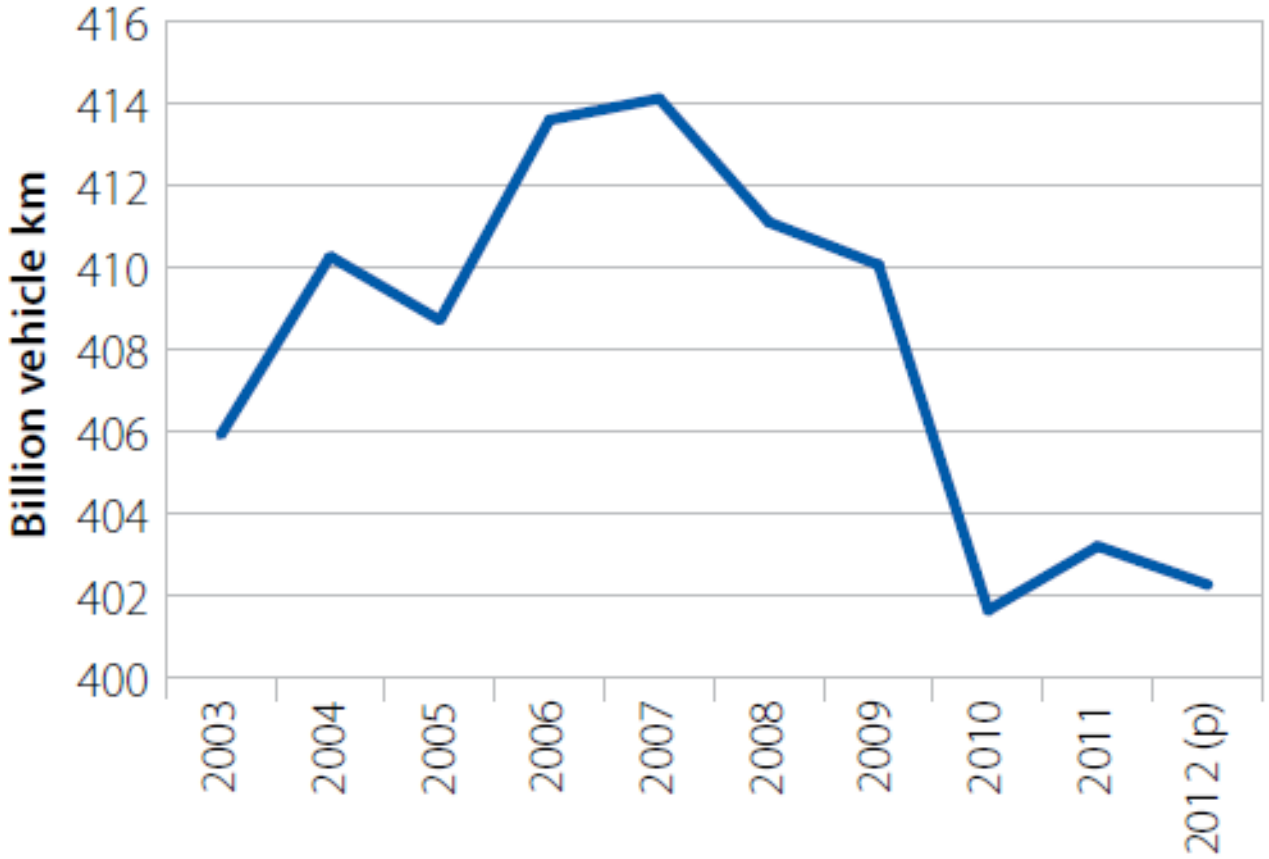
Car km fell in 2012 – response to higher fuel prices, other factors?



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Conclusions and challenges

- The UK's 2050 target of an 80% emissions reduction remains appropriate.
- By 2030 the UK should aim for a 60% reduction on 1990 – this is reflected in the fourth carbon budget, legislated in summer 2011.
- There is a need to reduce surface transport emissions through supply and demand side measures
- It is important to reduce vehicles measured on a lifecycle basis – electric vehicles are promising in this respect. Unclear whether targets should be on lifecycle basis.
- Good progress on conventional vehicles, electric vehicle market development remains major challenge.