

CLIMATE CHANGE 2014

Mitigation of Climate Change

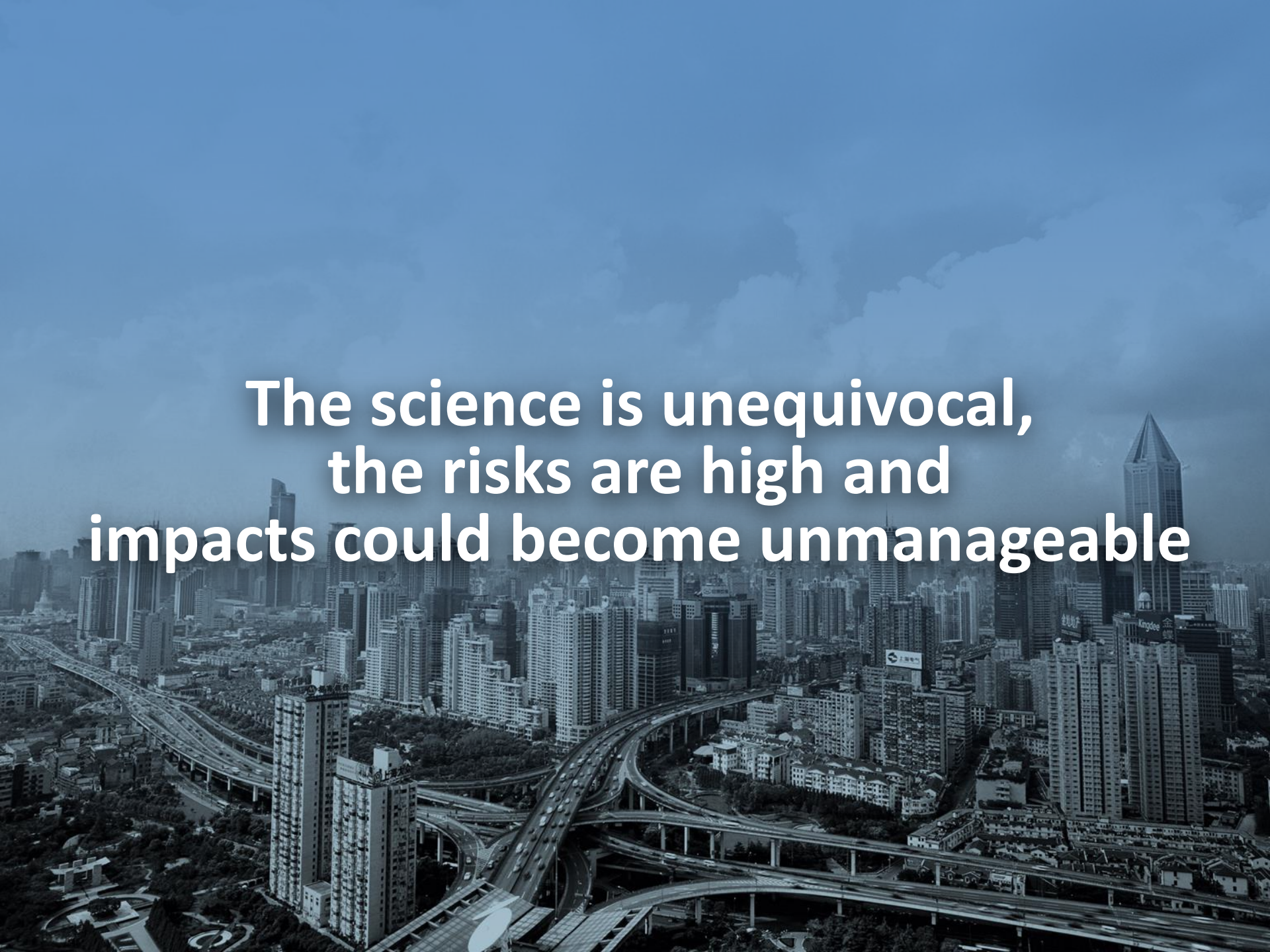
Jim Skea

Vice-Chair, IPCC Working Group III

LowCVP Annual Conference

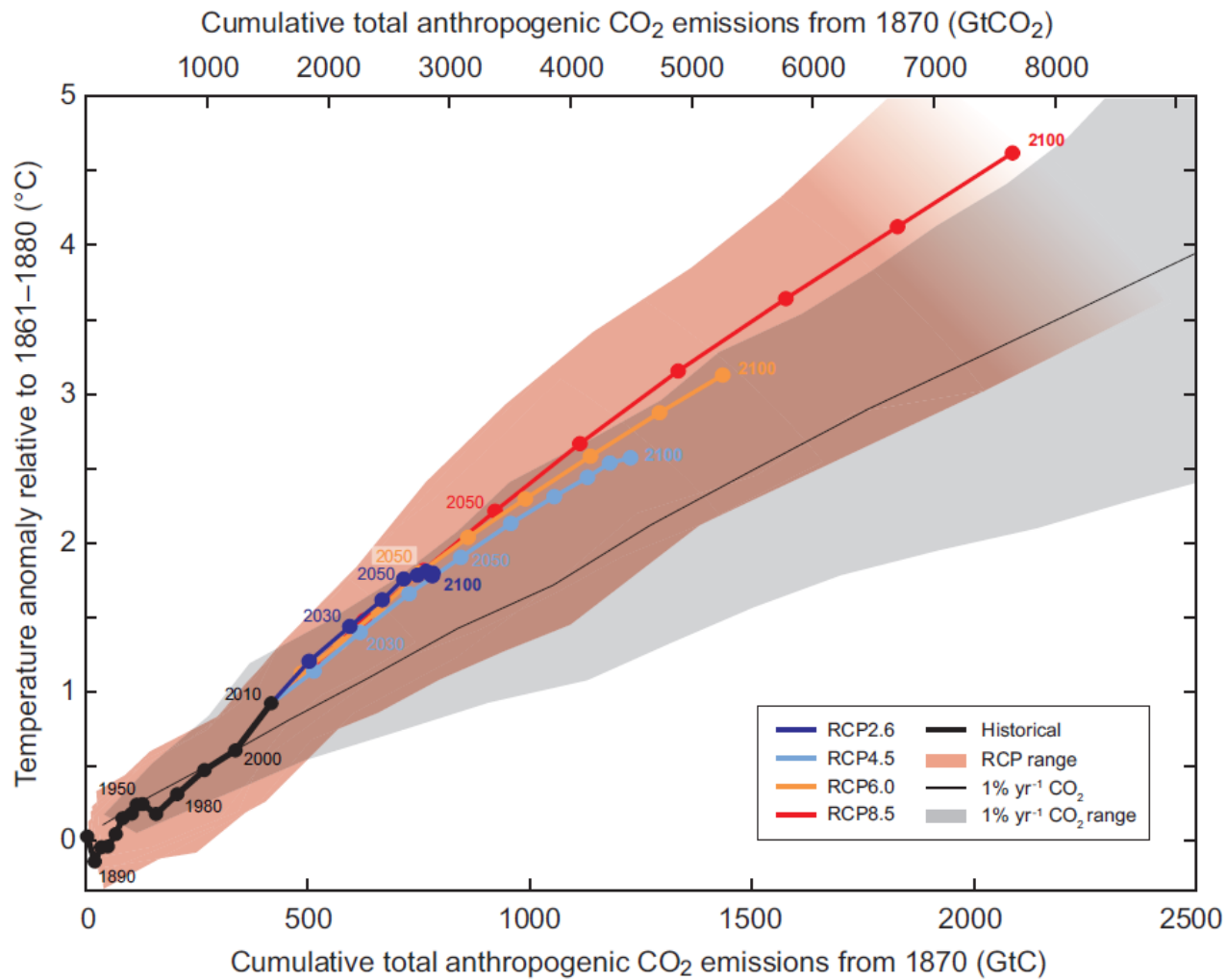
1 Victoria Street, London

15 July 2014

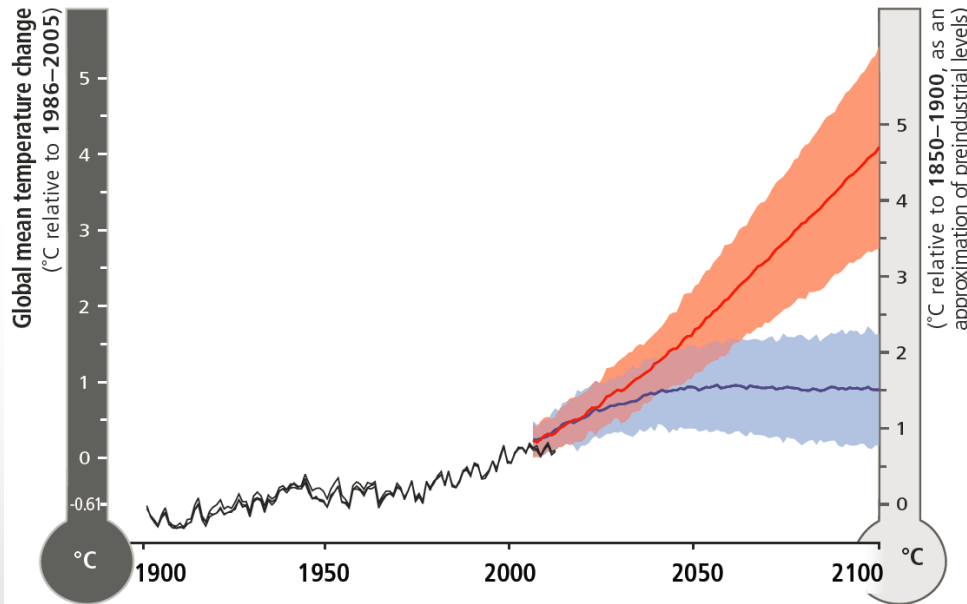
An aerial photograph of a dense urban landscape, likely a major city, featuring a complex multi-level highway interchange in the foreground. The city is filled with numerous high-rise buildings and residential structures. The sky is a deep, uniform blue, suggesting a clear or slightly hazy day. The overall image has a blue color cast.

**The science is unequivocal,
the risks are high and
impacts could become unmanageable**

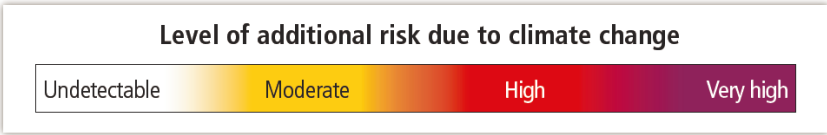
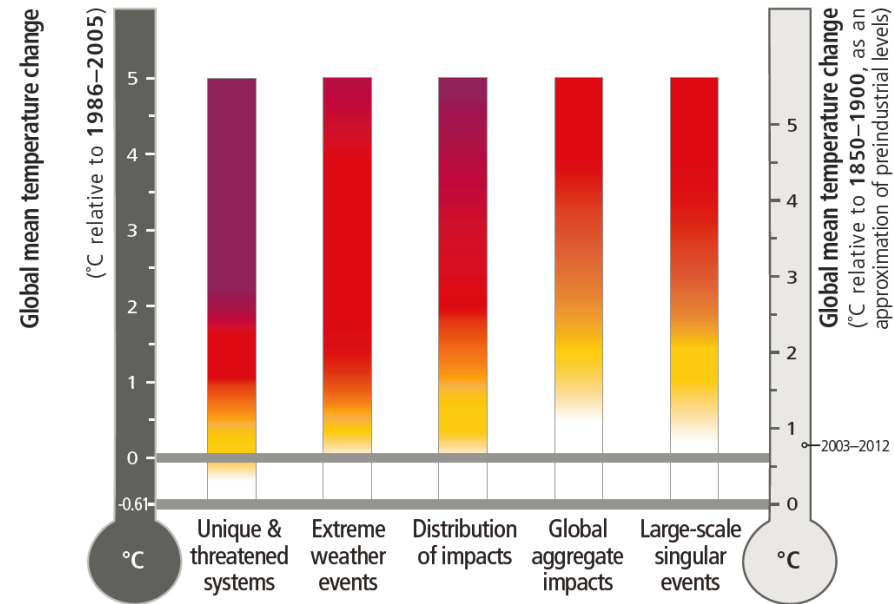
Working Group I: Cumulative CO₂ emissions are strongly correlated with global temperature rise




Working Group II: The risks of climate change



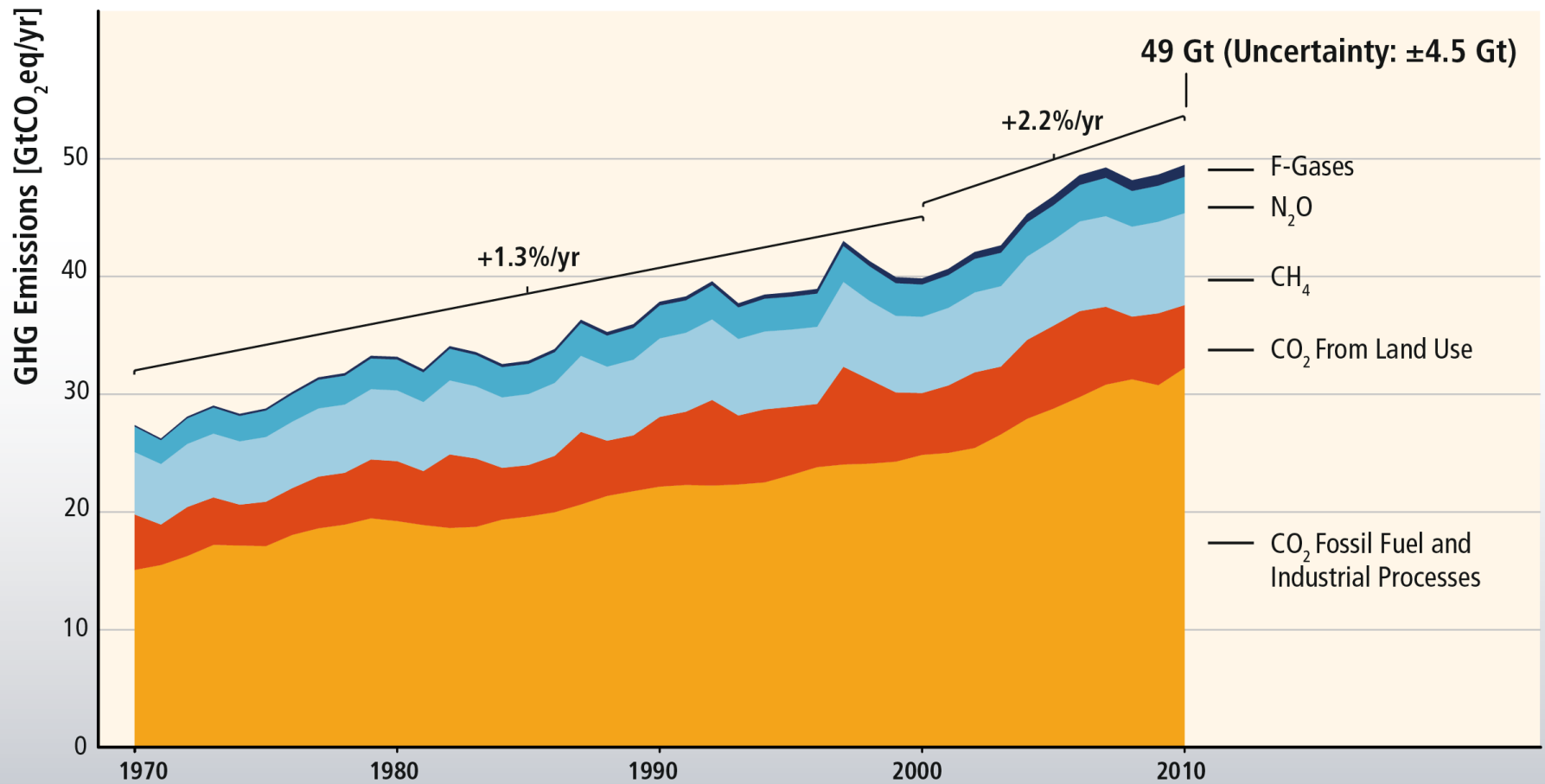
- Observed
- RCP8.5 (a high-emission scenario)
- Overlap
- RCP2.6 (a low-emission mitigation scenario)



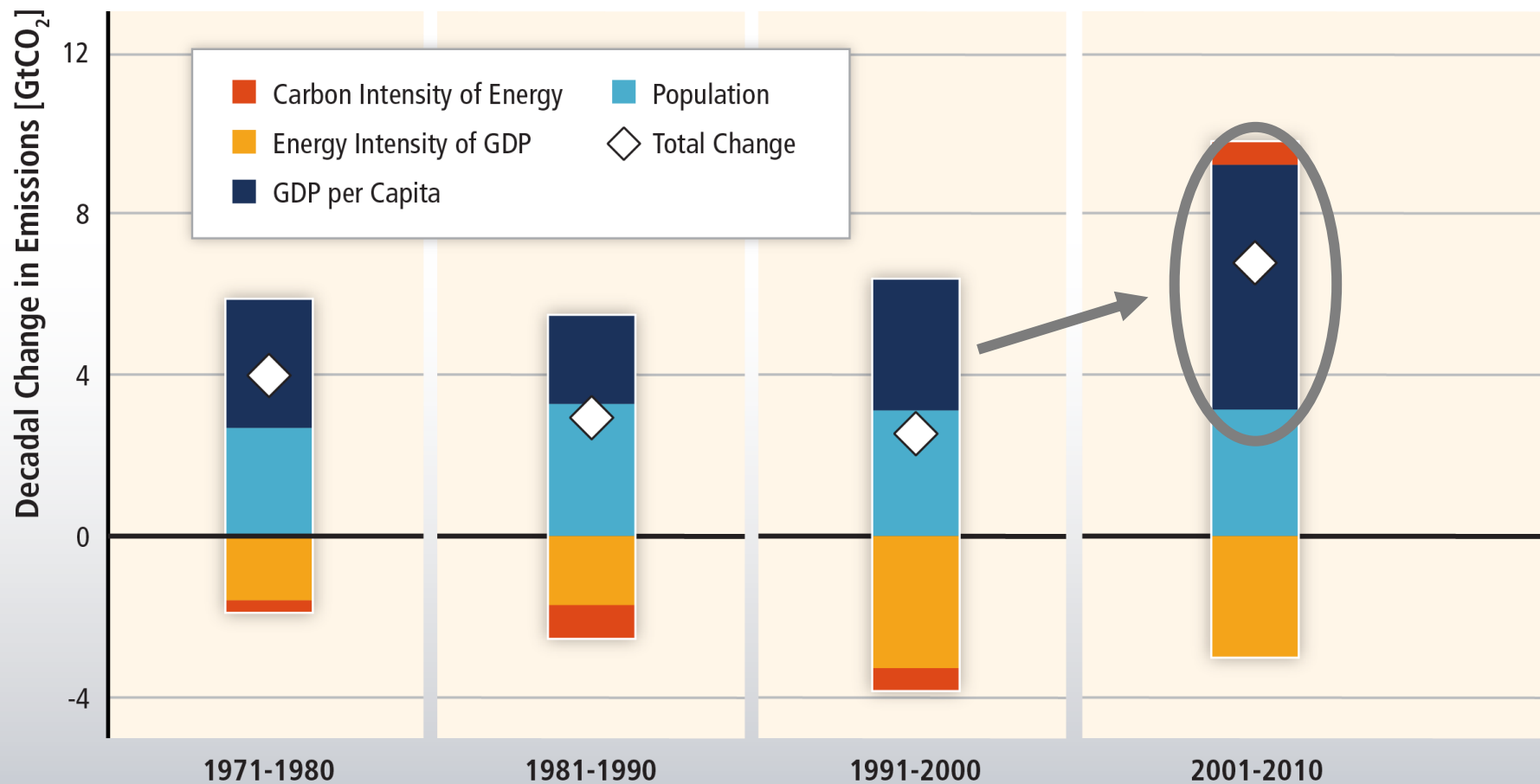
An aerial photograph of a dense urban landscape, likely a major city in Asia. The foreground is dominated by a complex, multi-level highway interchange with several overpasses and ramps. The city extends into the background with a high concentration of skyscrapers and high-rise buildings. The sky is a deep, overcast blue with some light clouds. The overall tone is somewhat somber and industrial.

**Emissions growth has accelerated -
despite plans and strategies.**

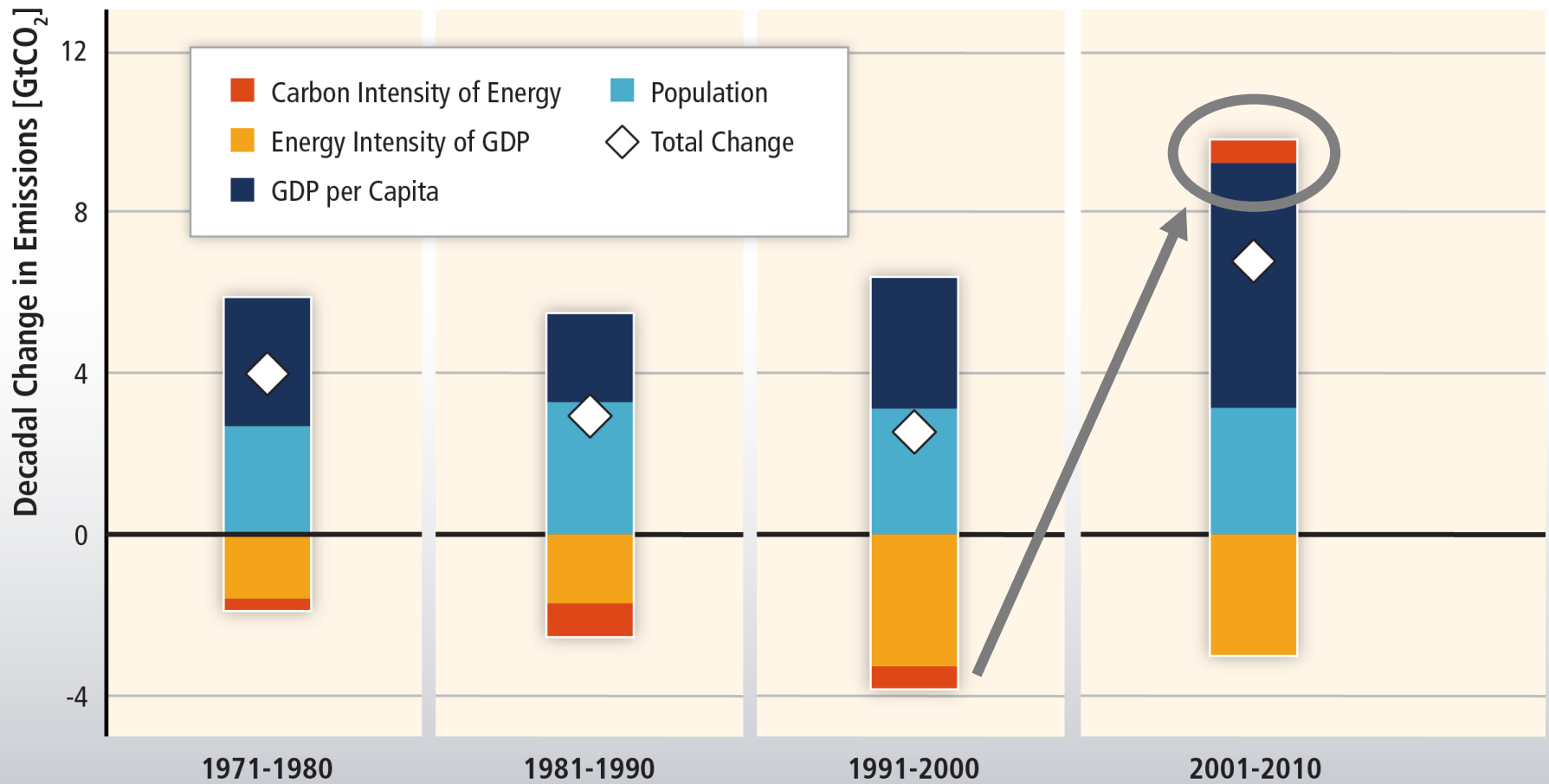
But emissions growth has accelerated in the last decade – driven by CO₂ from fossil fuel combustion



GHG emissions rise with income and population - but are moderated by energy efficiency



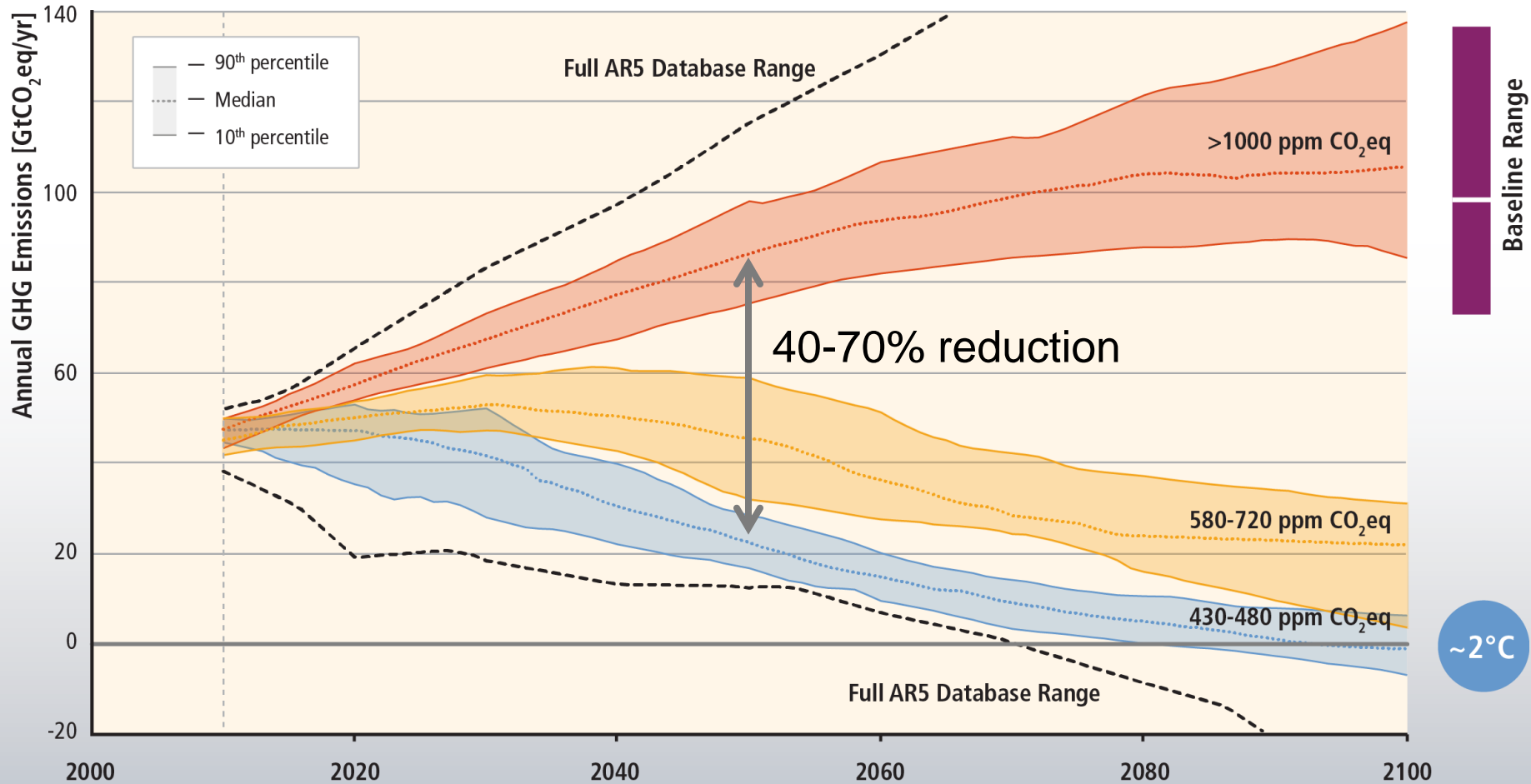
GHG emissions rise with income and population - but long-term energy decarbonisation has been reversed.





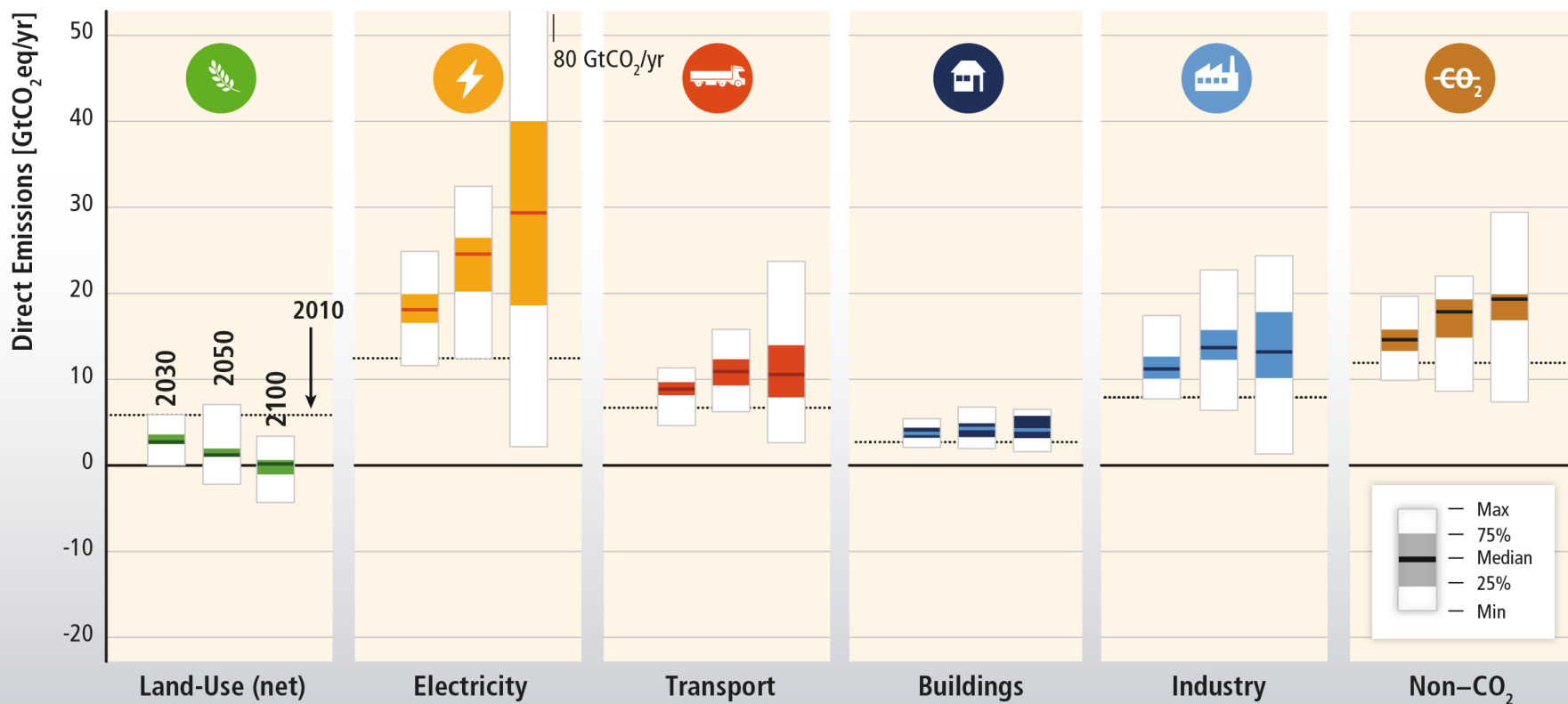
**Climate change mitigation is possible –
and early action will make it easier**

Stabilising the atmosphere means moving away from business-as-usual – regardless of how ambitious we are.



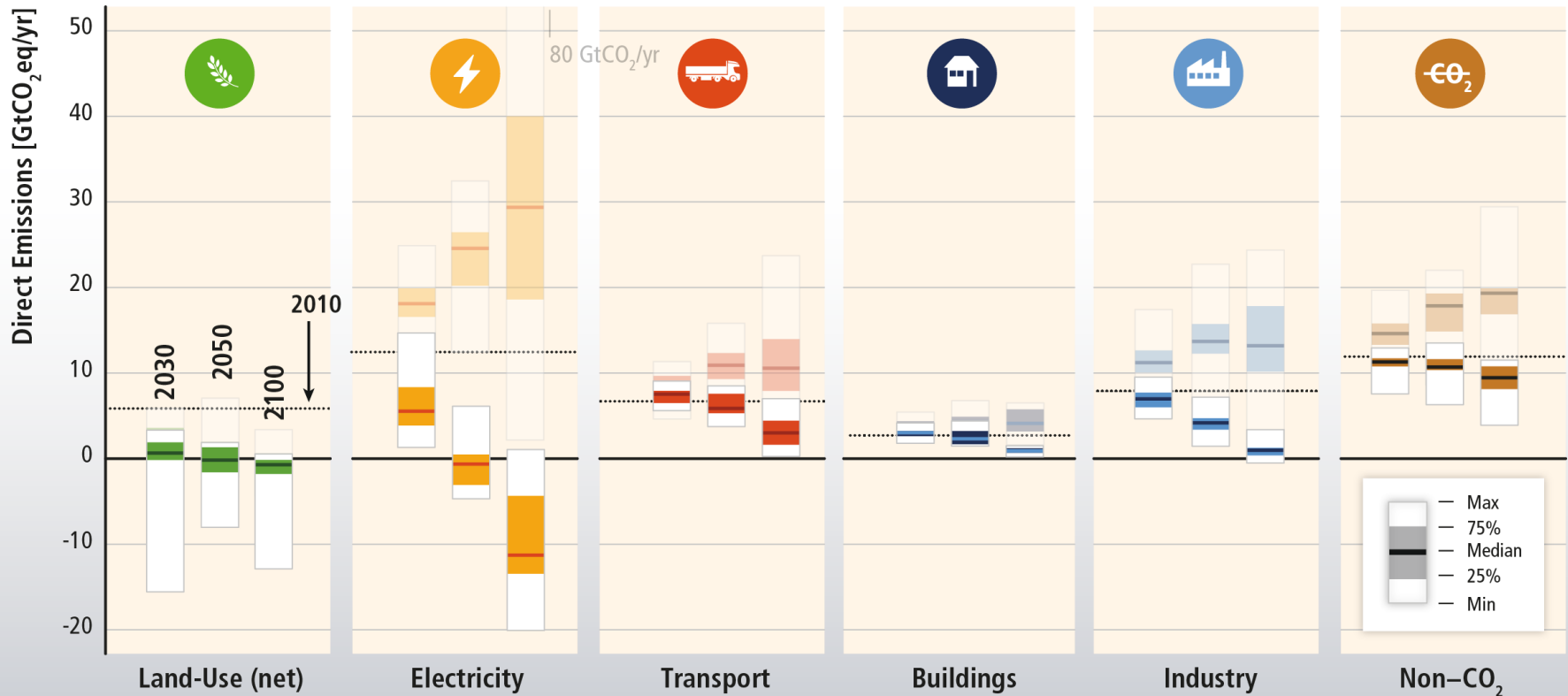
Emission patterns would need to change throughout the economy.

BASELINES

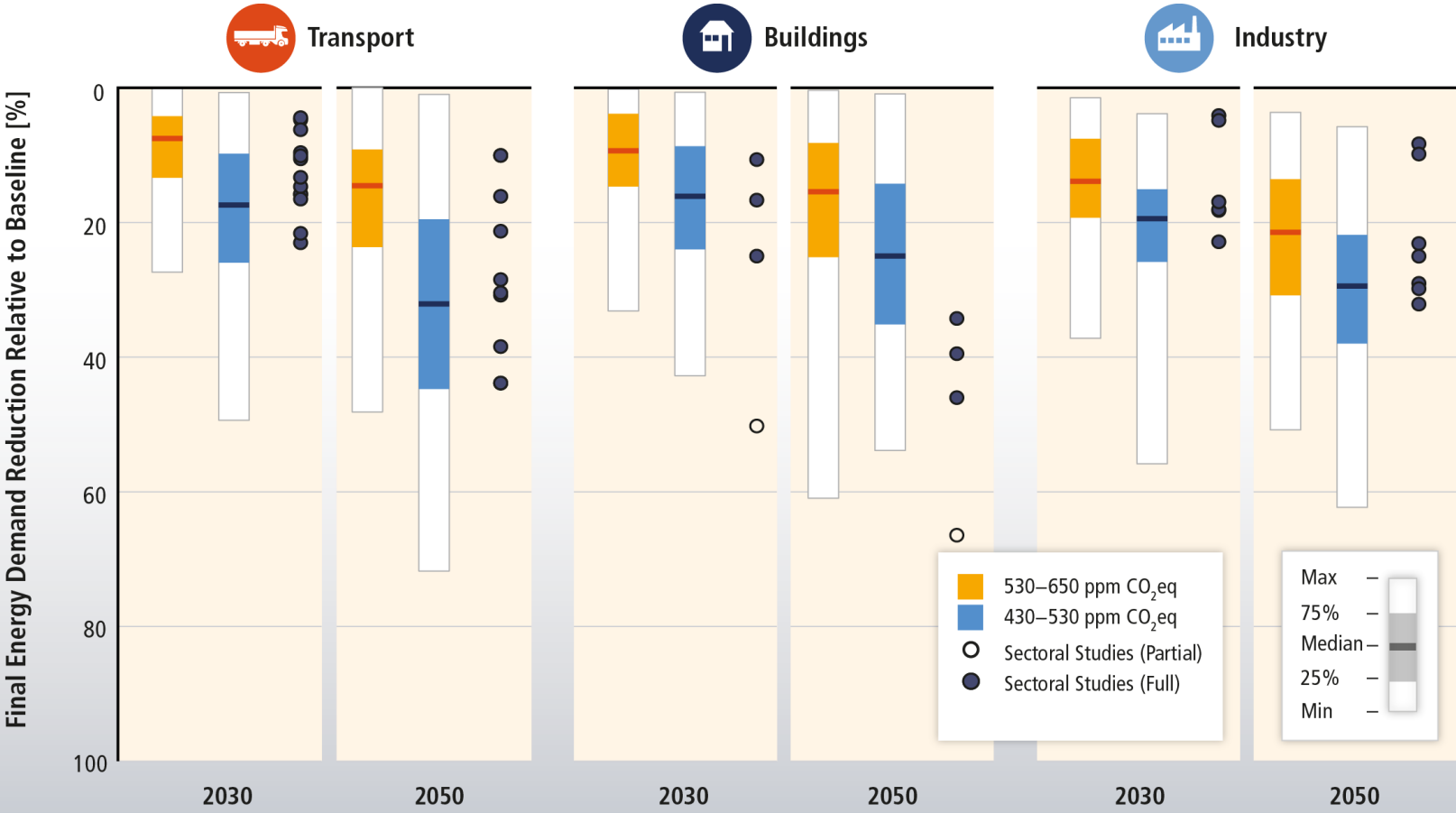


Emission patterns would need to change throughout the economy.

450 ppm CO₂eq with Carbon Dioxide Capture & Storage



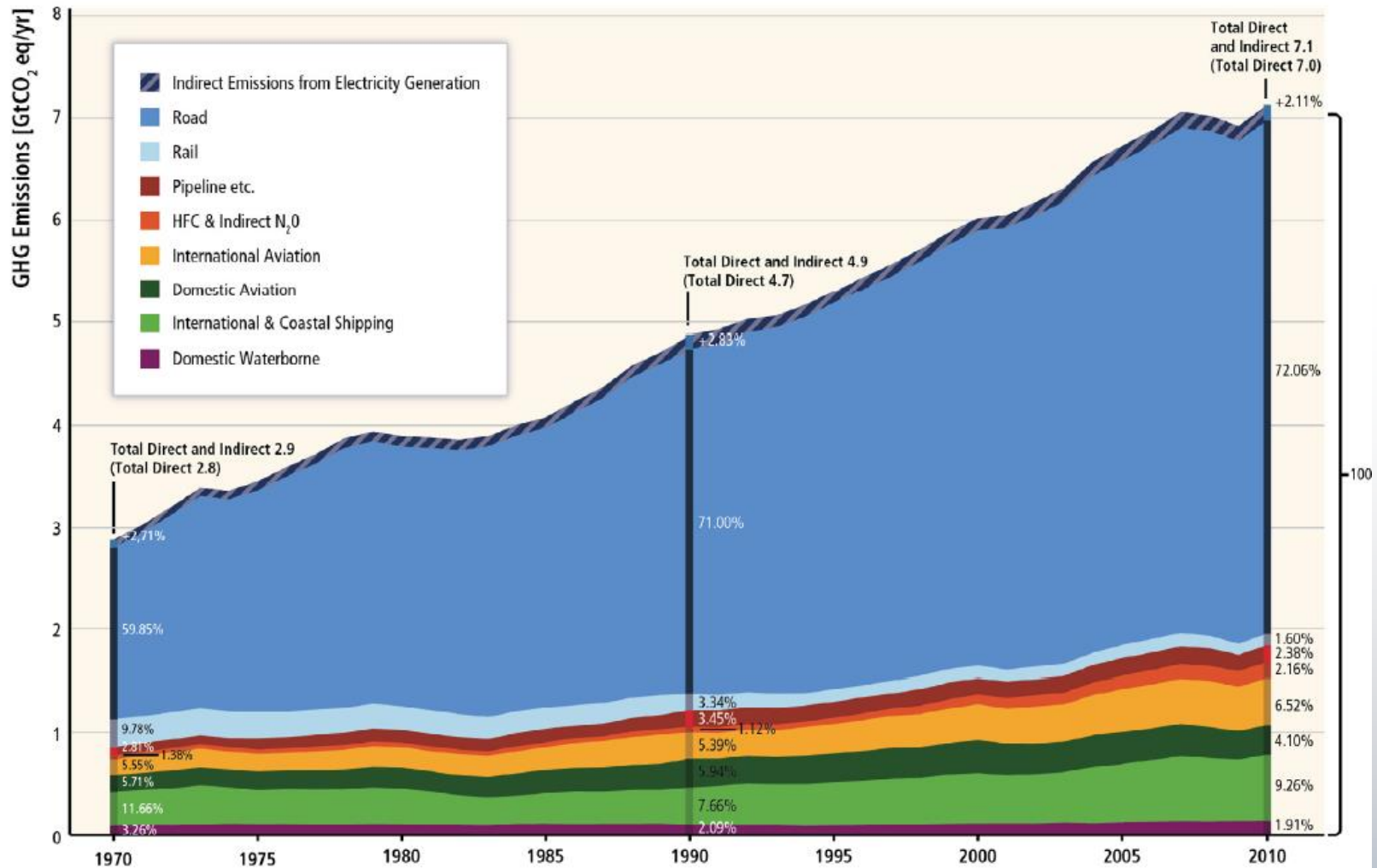
Energy demand would need to fall.



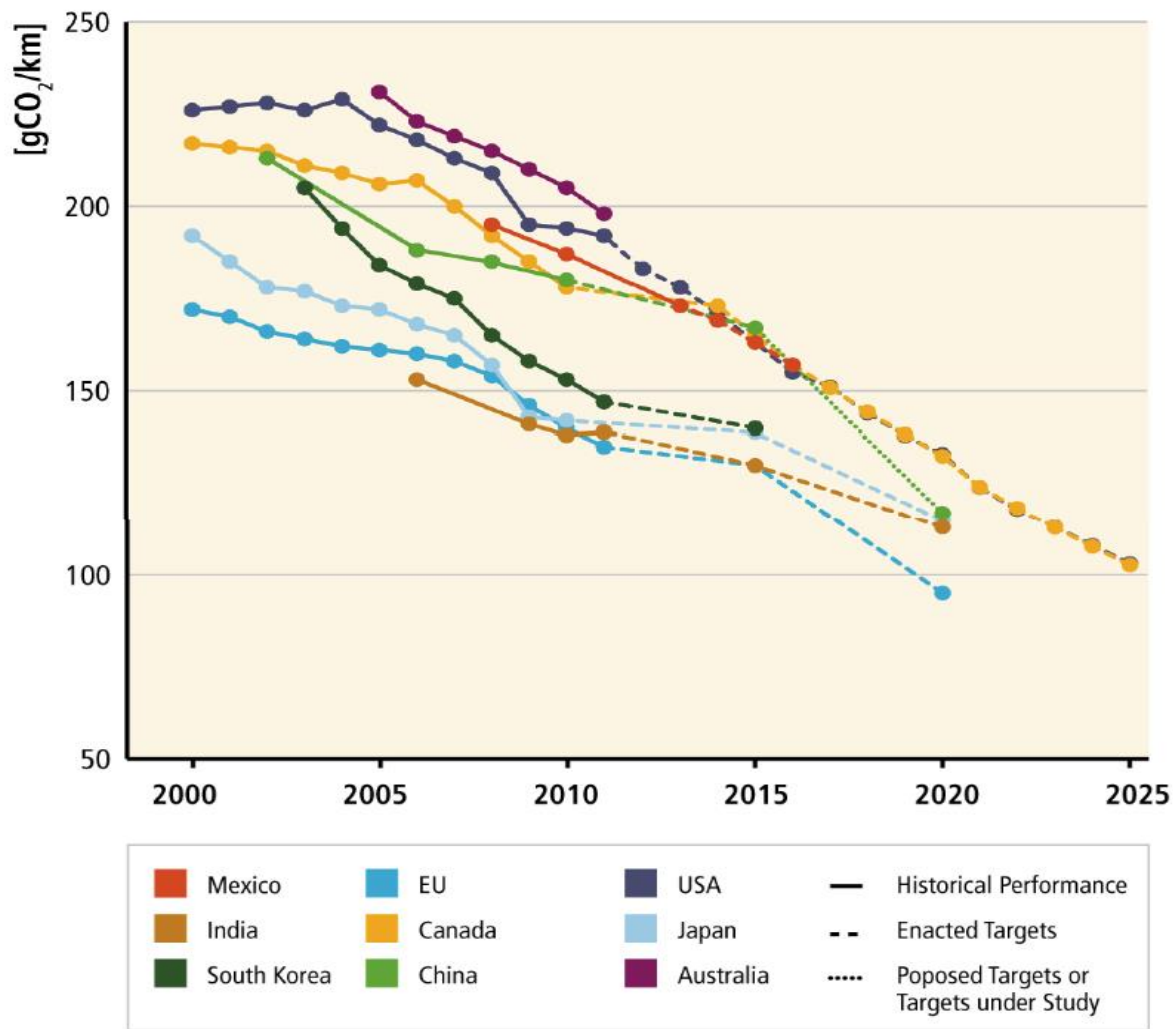
The transport sector has a key role to play



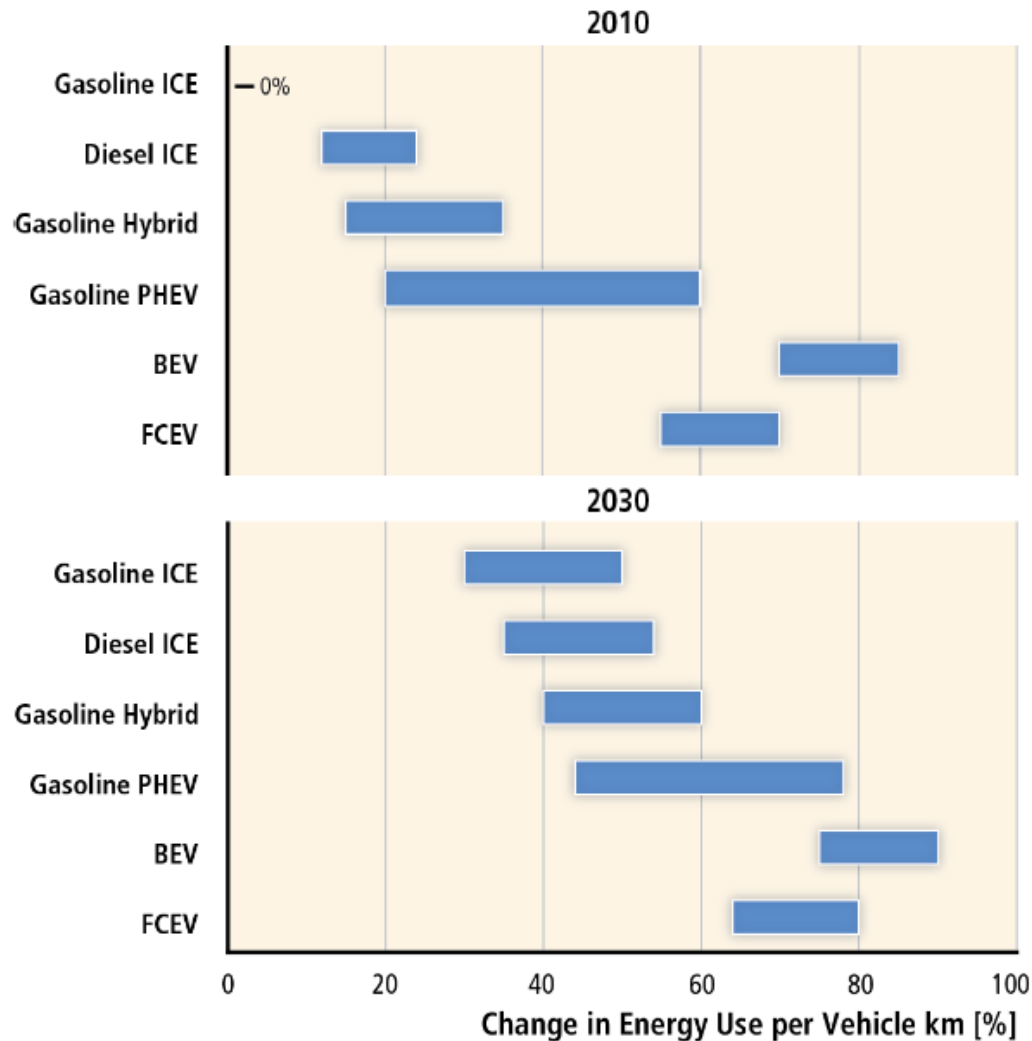
Greenhouse gas emissions from transport rose 250% (>6% pa) between 1970 and 2010



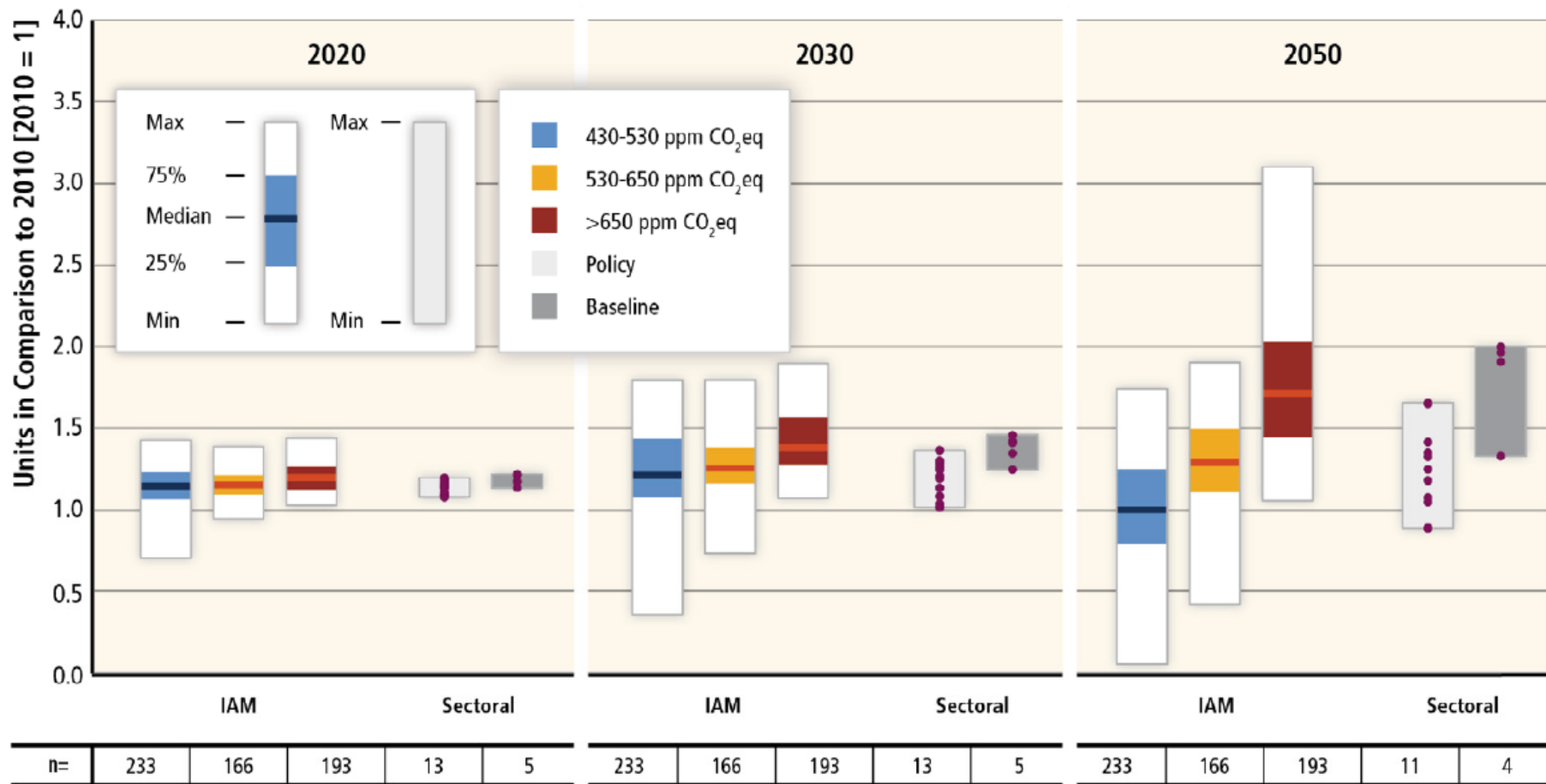
CO₂ emissions from LDVs have been falling..... and are projected to fall further



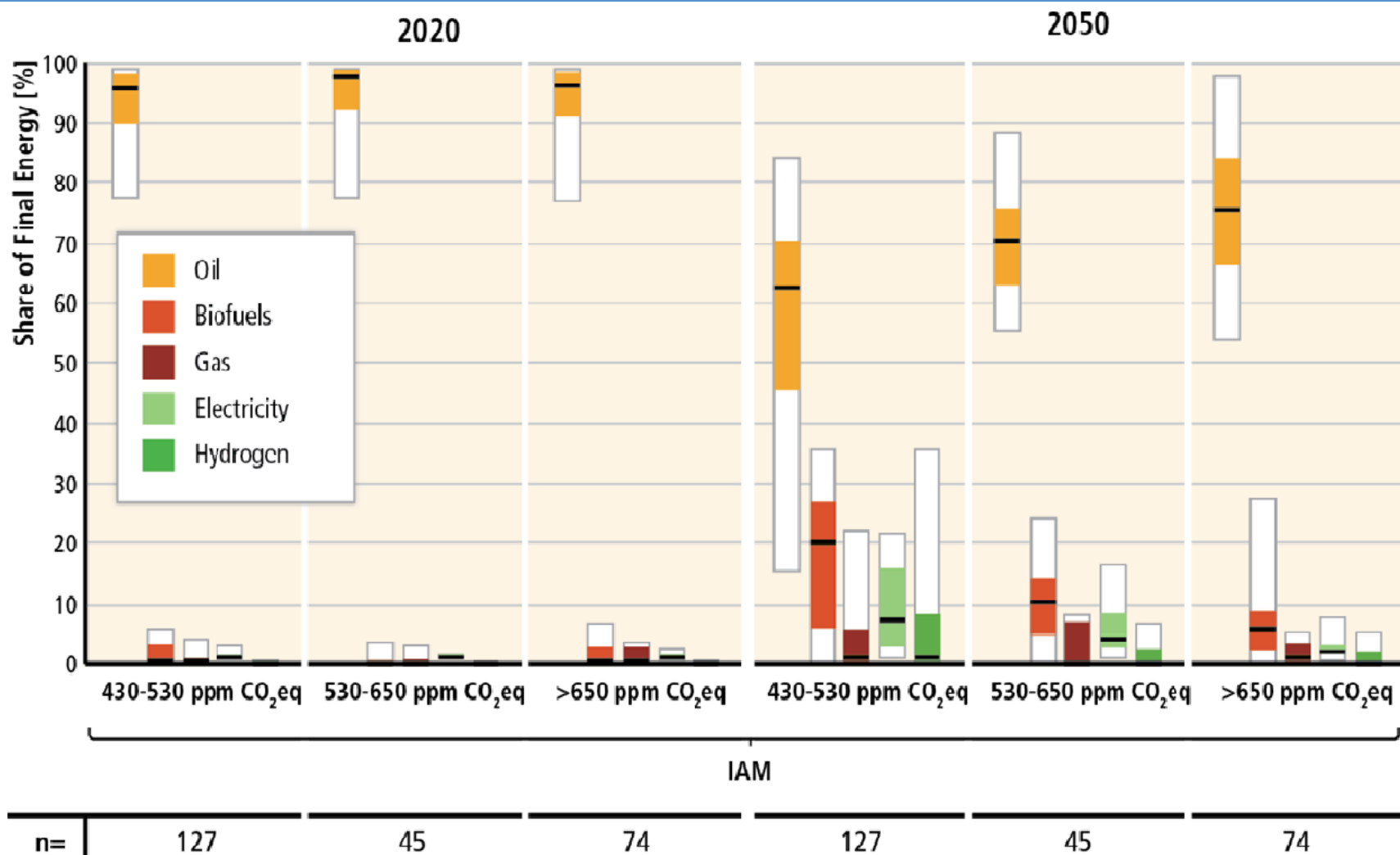
A range of LDV technology drive-train and fuel options could reduce energy use



Global transport CO₂ emissions could start to fall under aggressive mitigation scenarios



Global shares of final fuel energy in the transport sector



Meeting carbon budgets – 6th Progress Report to Parliament

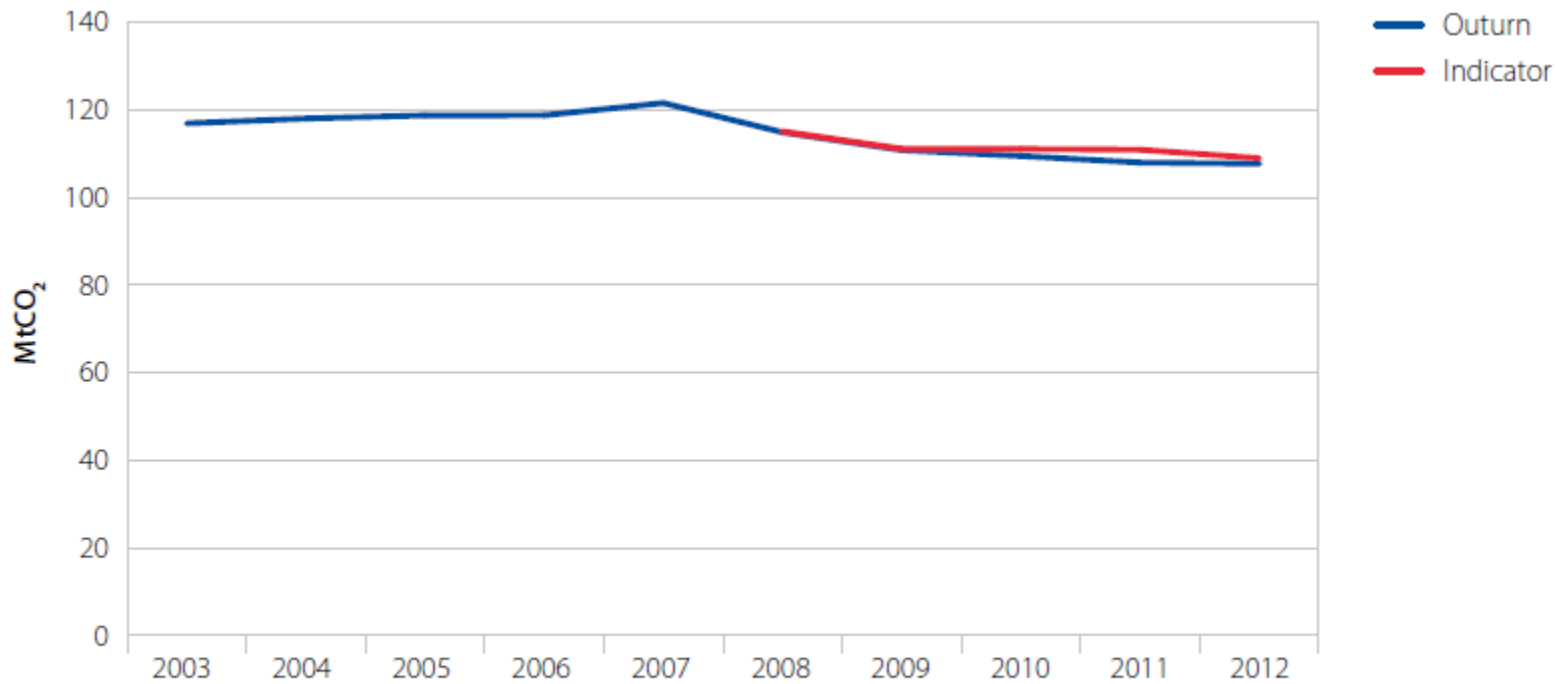
Committee on Climate Change, July 2014

www.theccc.org.uk



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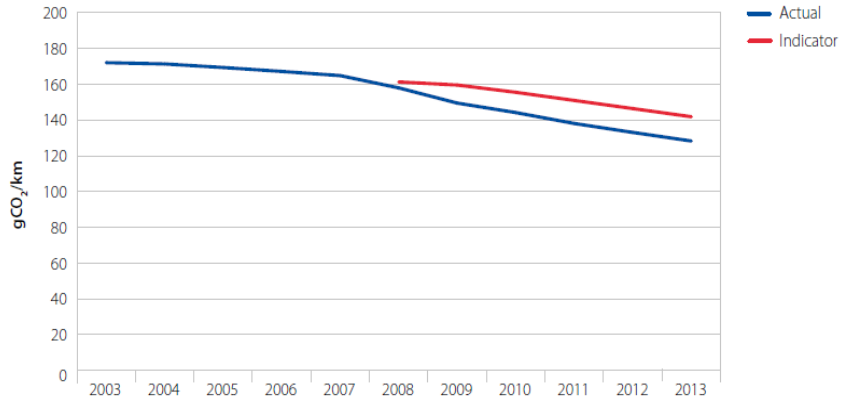
Domestic transport emissions fell 12% over the first carbon budget



Source: NAEI (2014), CCC modelling.

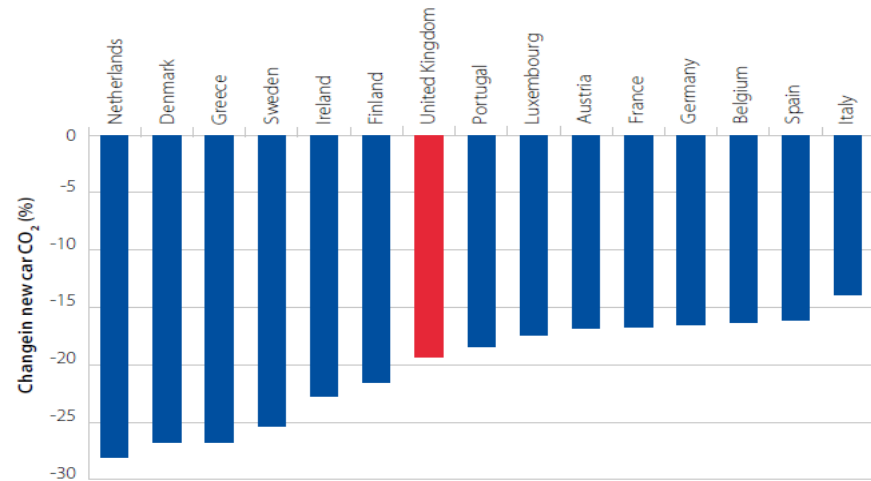
UK new car efficiency improved 4% in 2013 having improved 19% from 2007-2012

New car CO₂ vs indicator



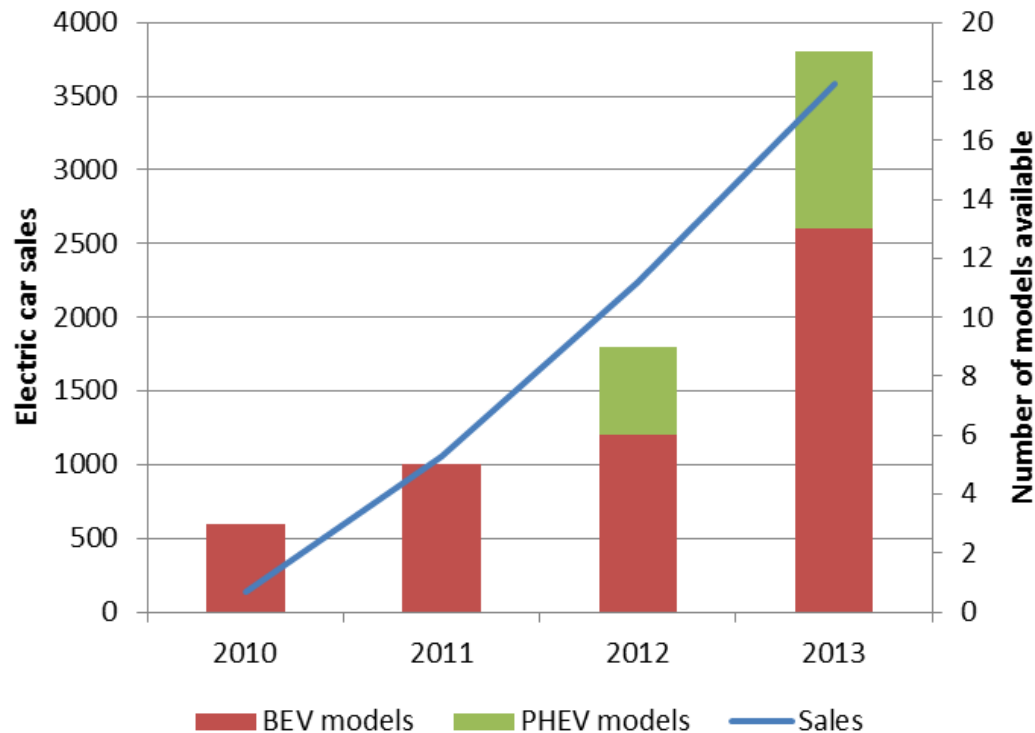
Source: SMMT (2014), CCC modelling.

Reductions in new car CO₂ in EU15 Member States (2007-2012)



EU new car and van CO₂ regulations have been instrumental in driving efficiency improvements.

While sales of electric vehicles remain low, they are increasing - as more models become available



Source: SMMT; Element Energy (2013) *Pathways to high penetration of electric vehicles* ; nextgreencar.com, manufacturer websites

Electric vehicle markets are developing rapidly in some countries. For example, in Norway, EVs represented 6.1% of all new car sales in 2013.

Transport – key recommendations



- In the context of negotiations around the overall 2030 EU emissions reduction package push for **stretching EU targets for emissions of new cars and vans for 2030**.
- Work with partner organisations (e.g. industry, local authorities, the Green Investment Bank) to **tackle financial and non-financial barriers to electric vehicle uptake** - new, low-cost approaches to financing; onstreet residential charge points and a national network of rapid charge points; softer time-limited measures such as access to bus lanes and parking spaces.
- With agreement of a strong EU target and/or tackling of financial and non-financial barriers there would be scope to phase out the existing capital subsidy for electric vehicles.

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