Committee on Climate Change

08 July 2019

Net Zero: the transport challenge

Baroness Brown of Cambridge DBE FREng FRS
Vice-Chair Committee on Climate Change

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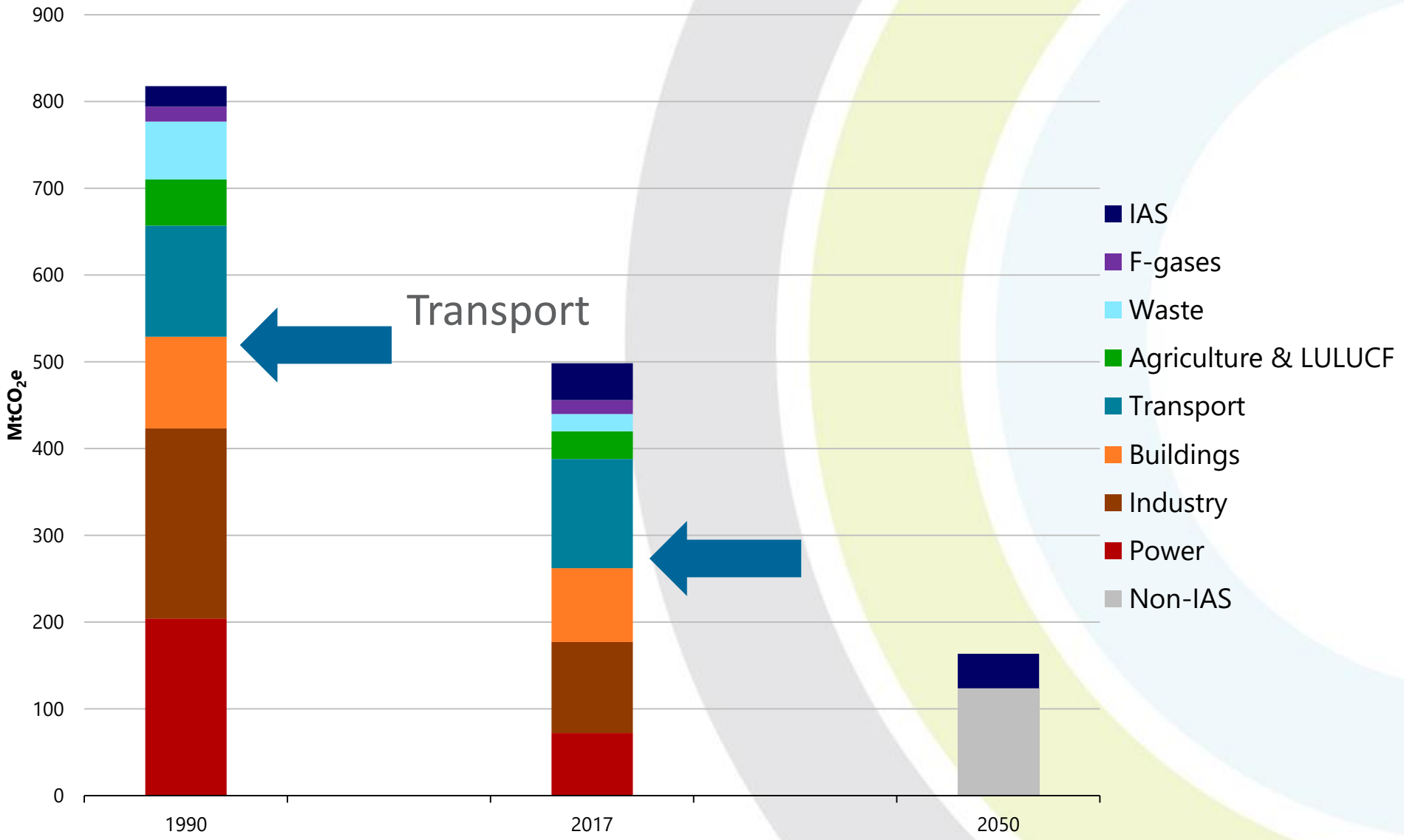
Progress towards the 80% target



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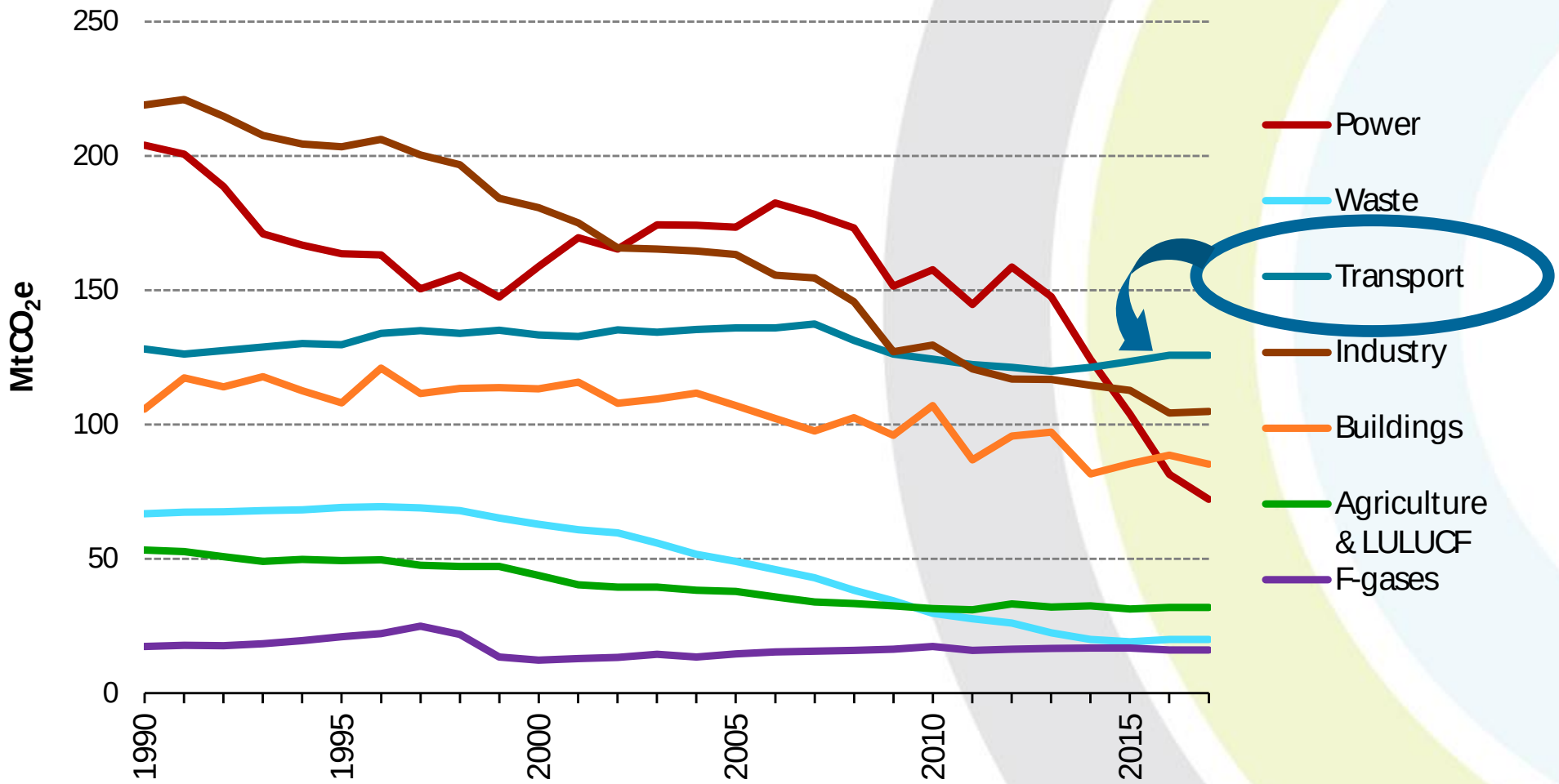
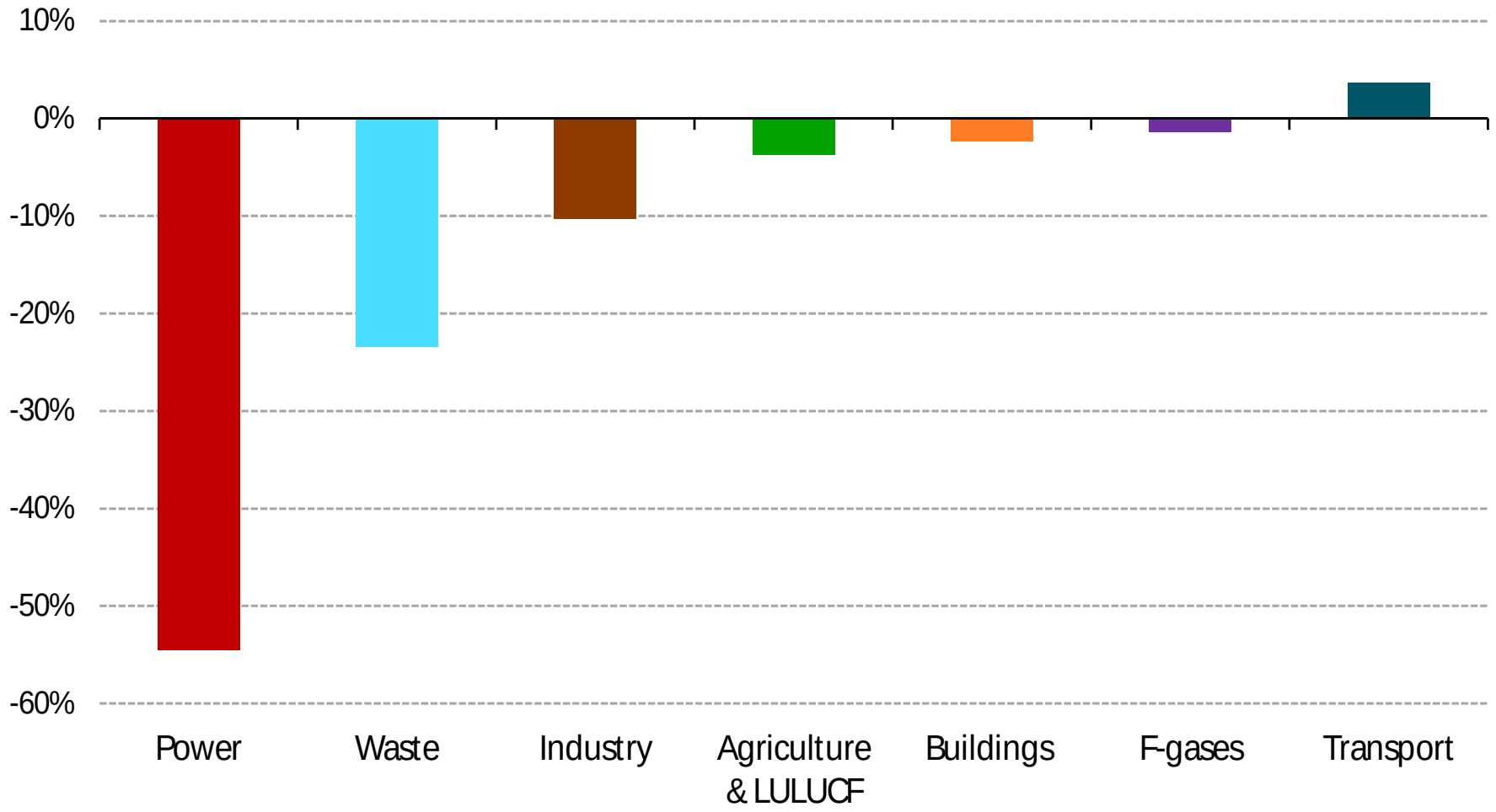
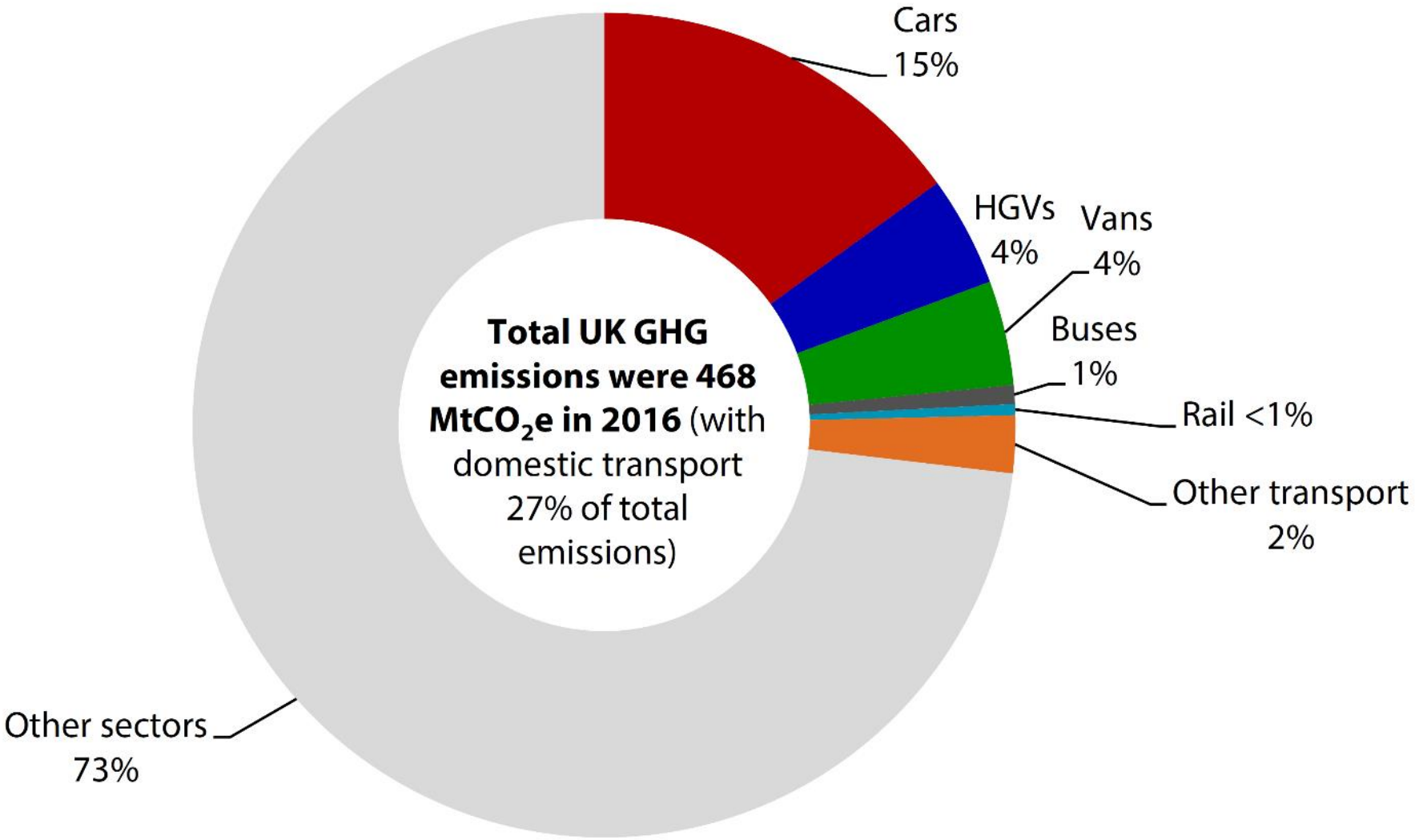
Progress by sector



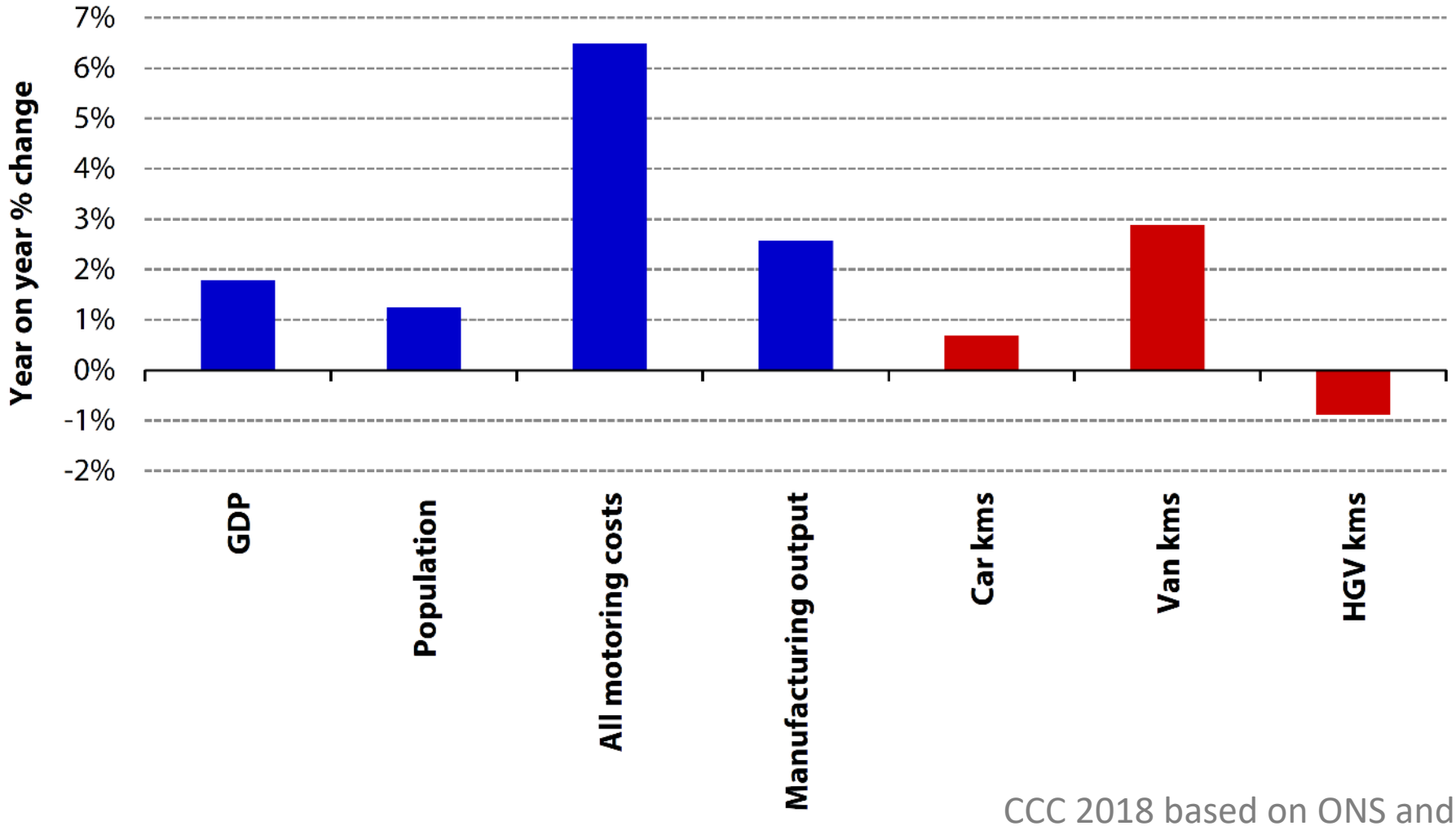
Changes in sectoral emissions 2012-2017



Transport emissions 2016

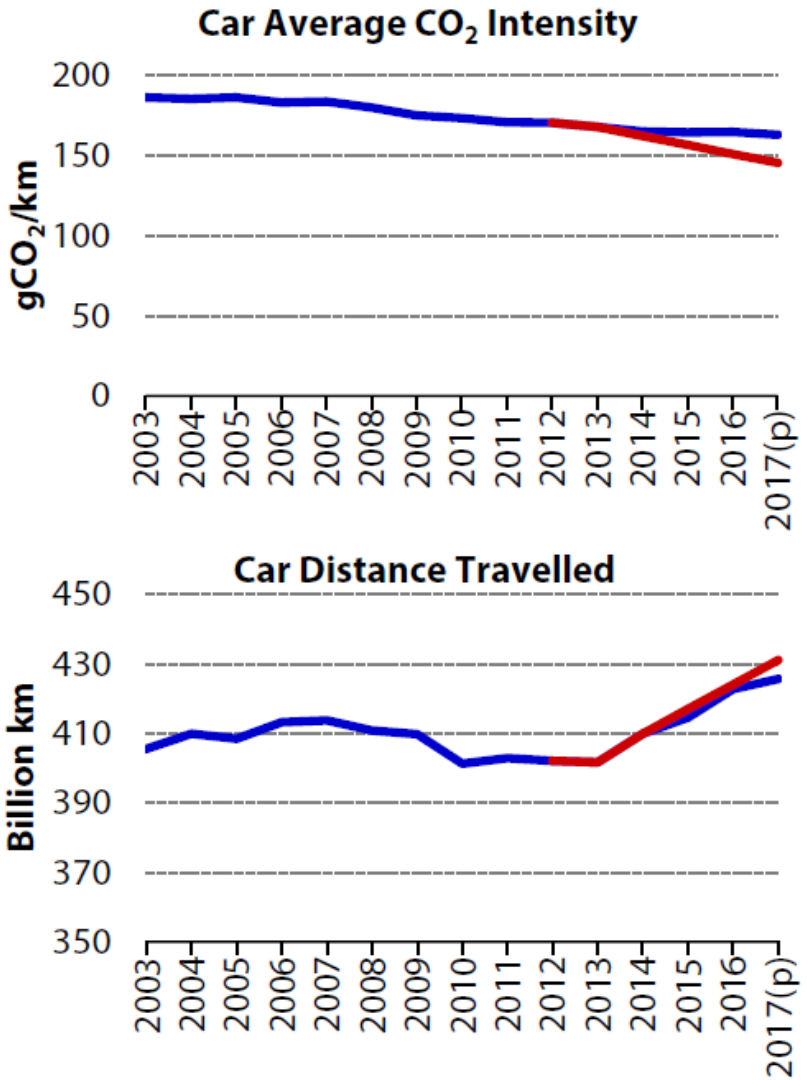


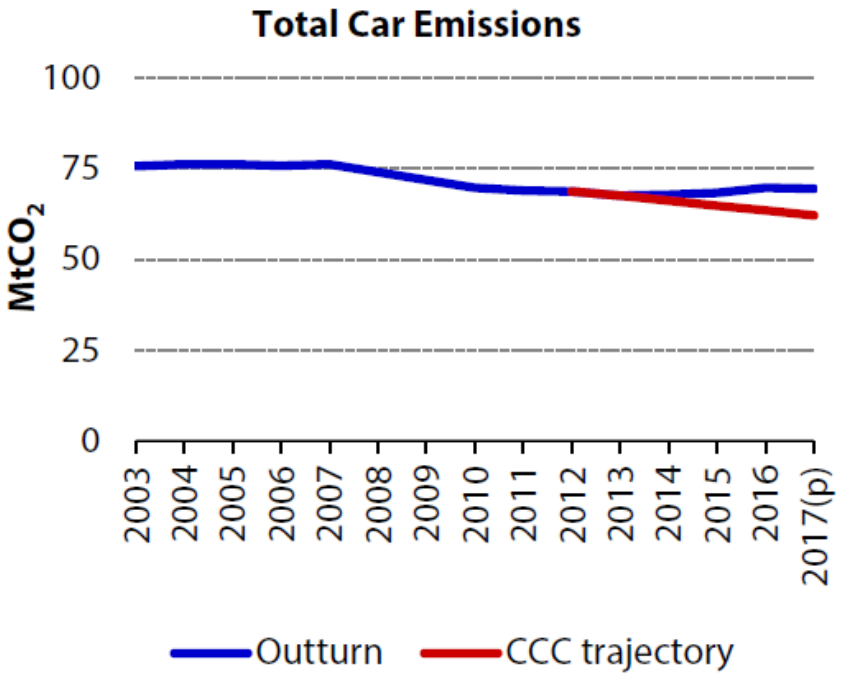
Changes in travel and transport demand 2016 - 2017



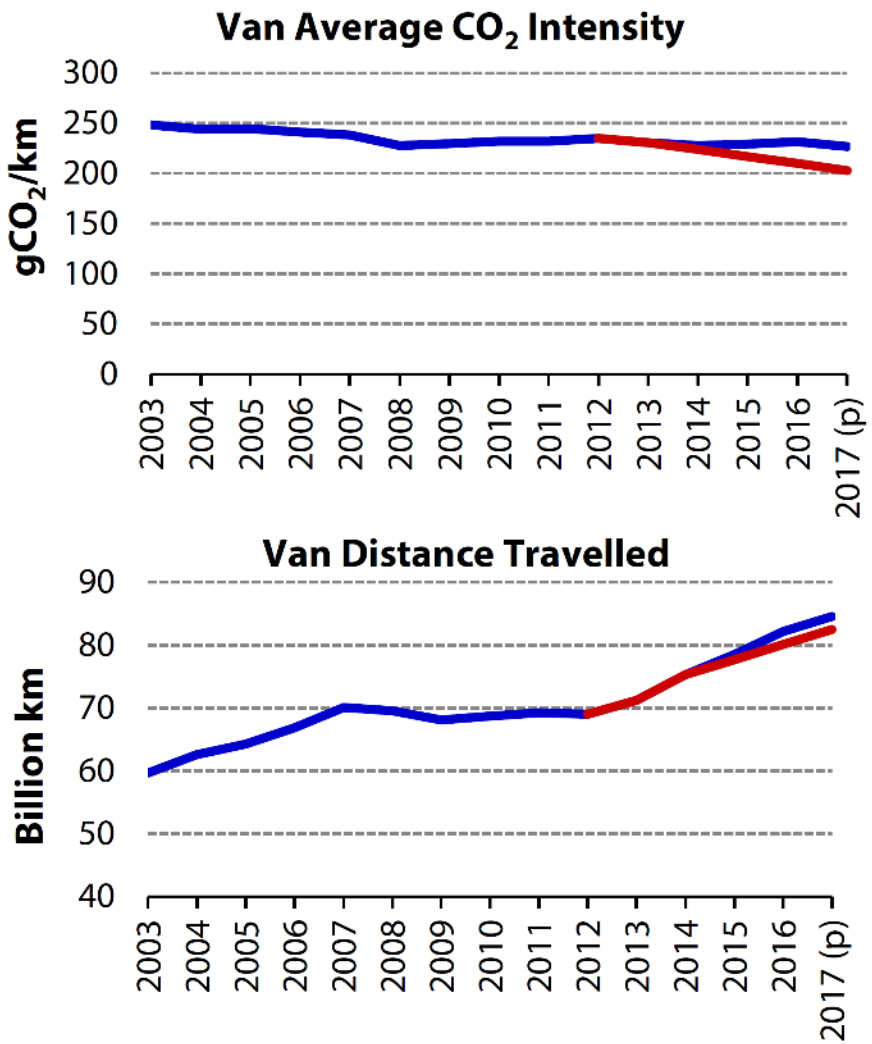
CCC 2018 based on ONS and DfT figures

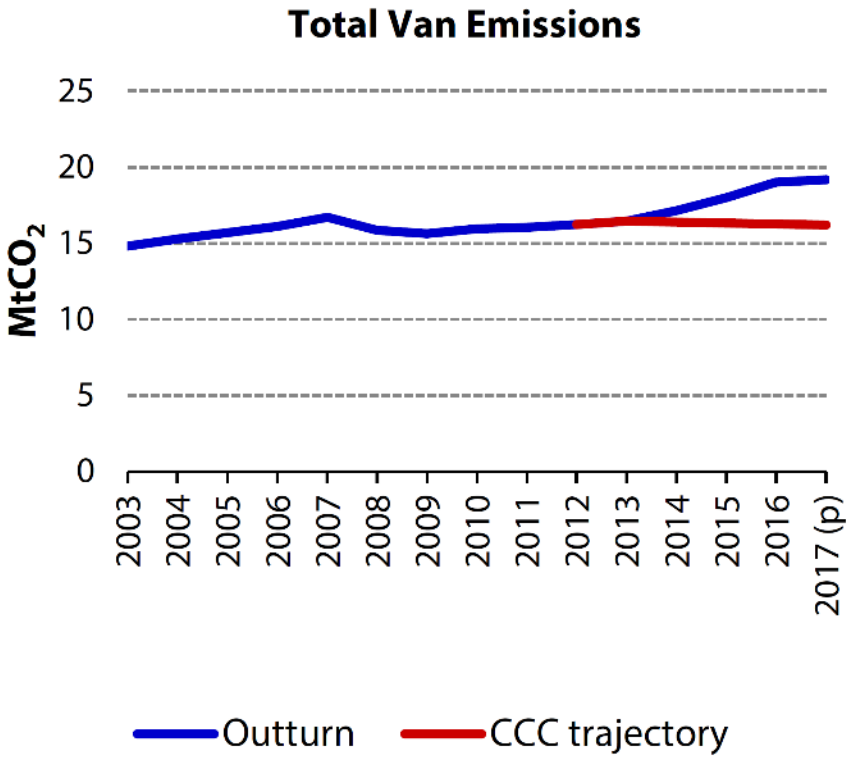
Trends in car emissions



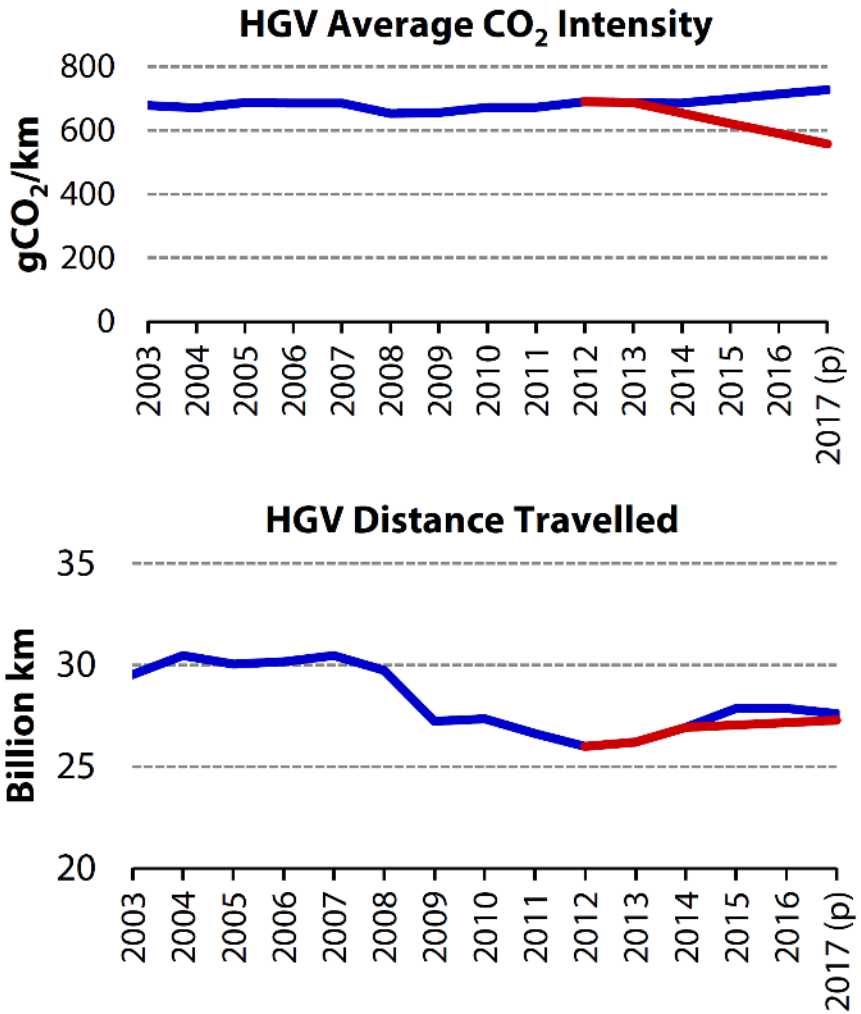


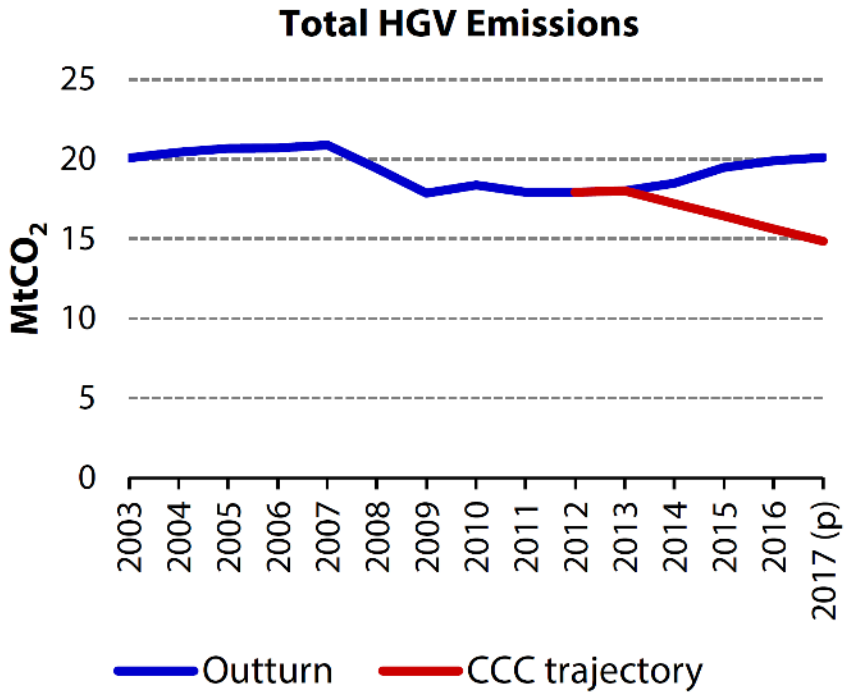
Trends in van emissions





Trends in HGV emissions





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But…

- Freight tonnes per km 9.4% up in 2016
- Emissions per tonne per km 9% down in 2016
- EU:
  - Reporting: January 2019 annual reporting of emissions and fuel consumption by manufacturer
  - Targets:
    - 15% reduction in emissions by 2025
    - 30% by 2030
    - from a 2019 baseline

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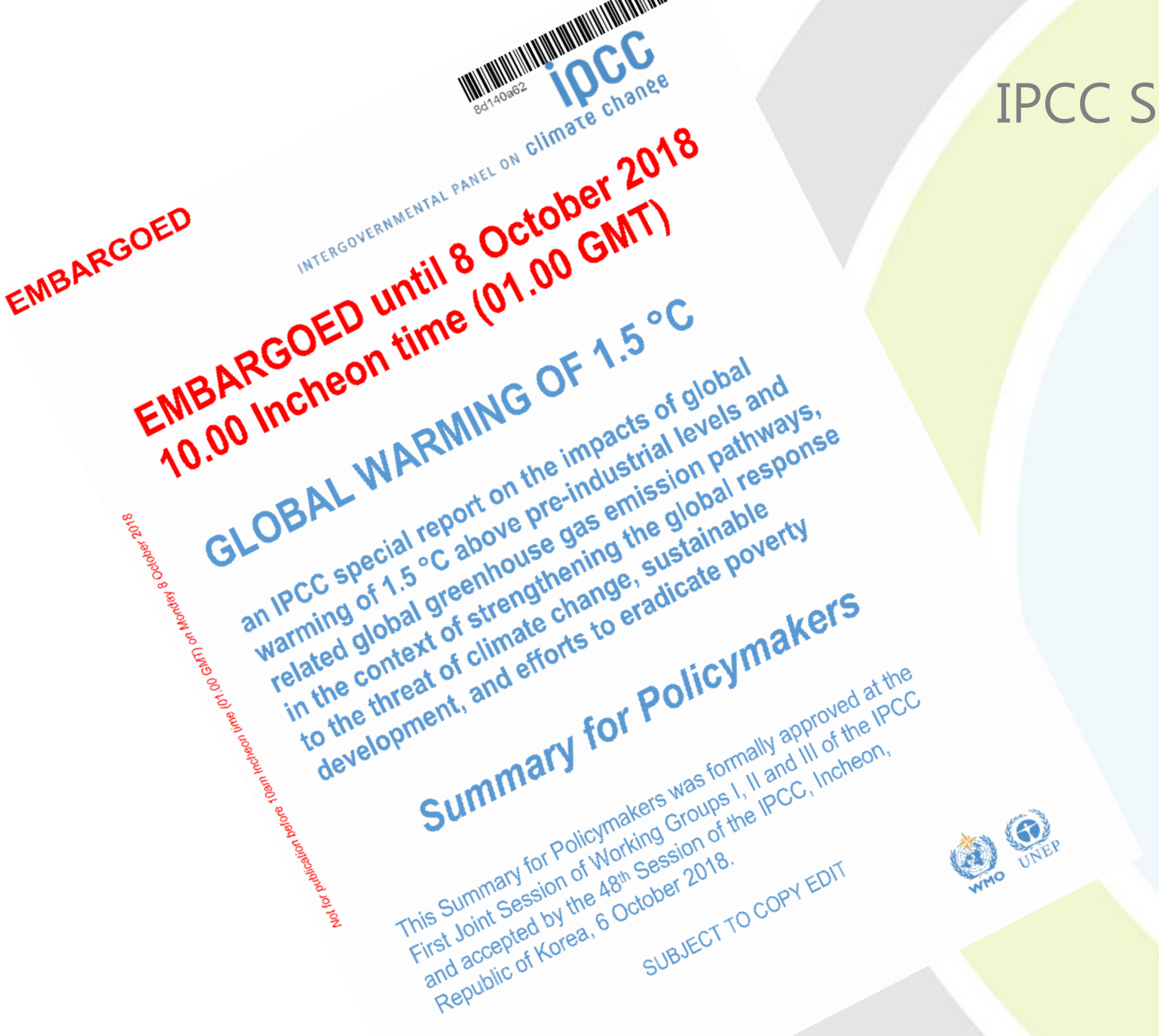
IPCC Special Report



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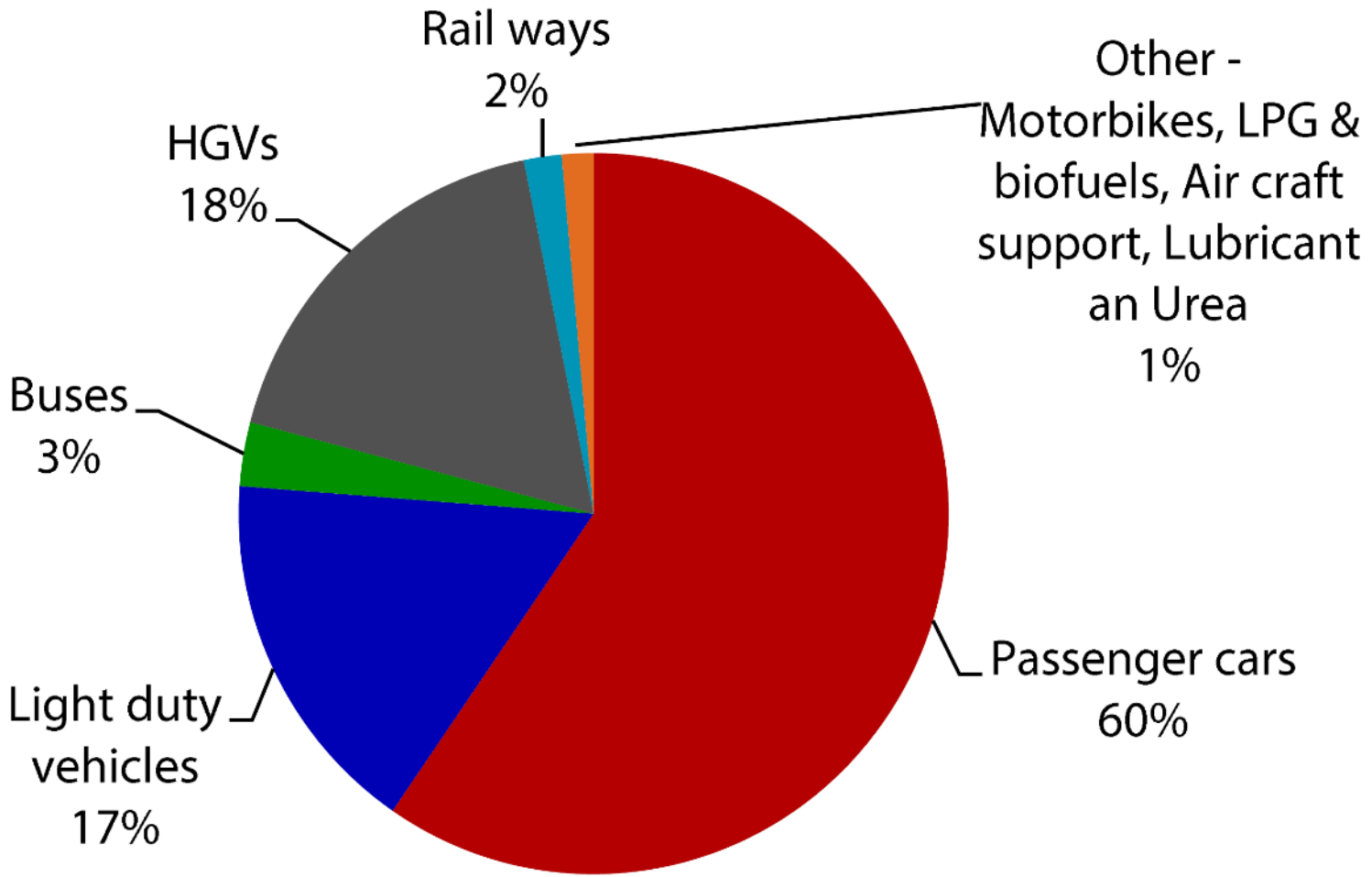
UK Net Zero Target

- Legislated 27th June 2019
- 80% by 2050 is now 100% by 2050

Transport: 27% UK emission to zero

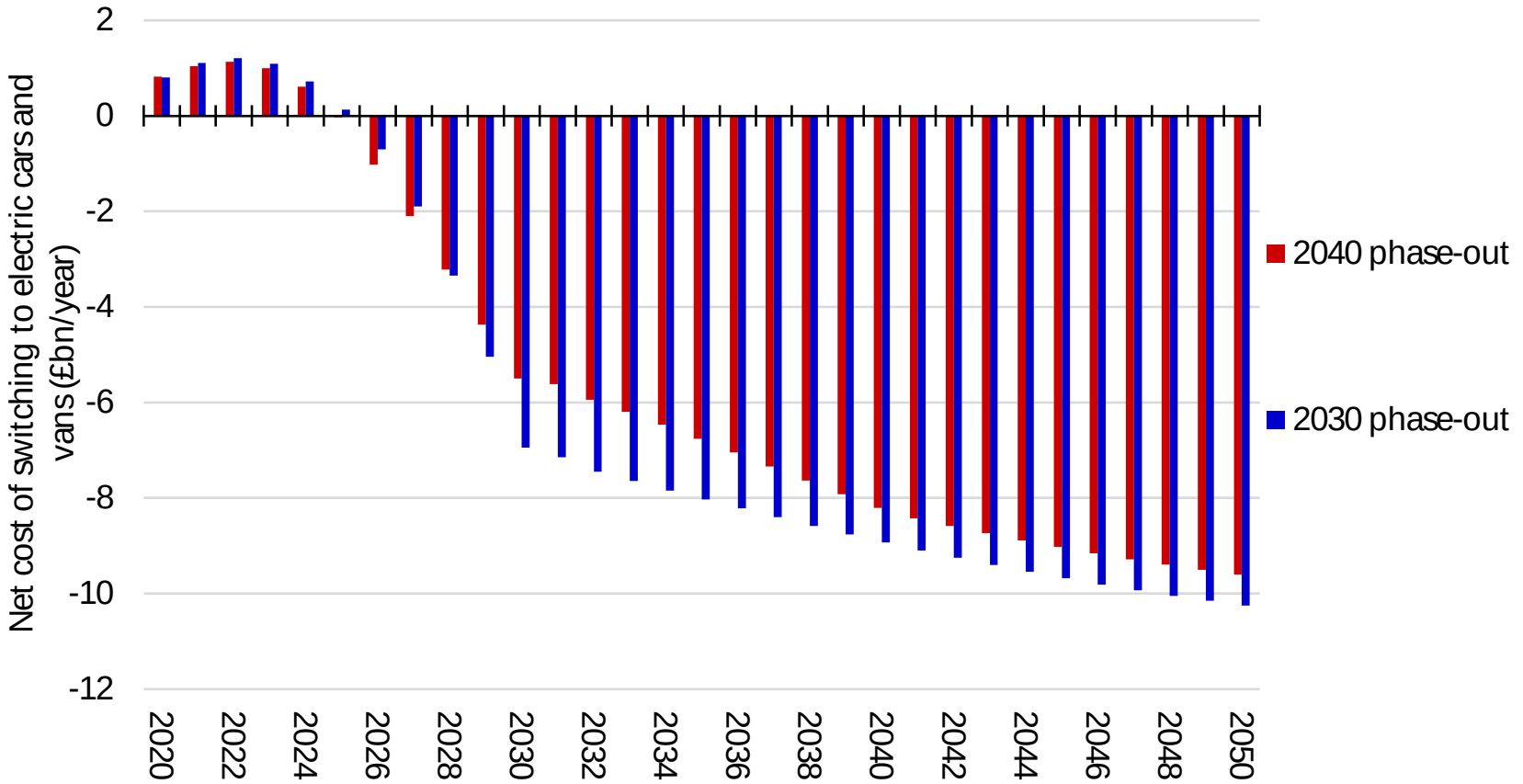


CCC Net Zero: cars and vans

- 2035: all new cars and vans to be electric (or other zero emission technology such as hydrogen)
- 2030 switchover better…and cheaper
- Government support needed for charging infrastructure
  - 3,500 rapid an ultra-rapid on motorways
  - 210,000 on streets in towns and cities
- Co-benefits of cleaner air and quieter streets

Costs and benefits of meeting a UK net-zero target

A 2030 switchover to electric vehicles would save more money than a 2040 switchover



Source: CCC analysis

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CCC Net Zero: HGVs

- Mid-2020s: decision on infrastructure for zero emission HGVs
- Deployment late 2020s, through 2030s
- International coordination
- Trials of zero emission HGVs and infrastructure: urgent
- From 2020s: vehicle and fuel taxation to incentivise operators to move to net zero
- Support for refuelling infrastructure
- Support for the business case for hydrogen

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HGV options

Hydrogen

Toyota

Producing hydrogen is more energy intensive than fuelling HGVs with electricity directly.

Electricity with on road refuelling

Scania/Siemens

Costly and lengthy infrastructure roll-out required.

Electricity with 'Megachargers'

Tesla

Uncertainty over battery developments.
Impact on electricity grid.

CCC Net Zero: hierarchy of fuels

- Electricity first
- Hydrogen
- Synthetic fuels

- Biofuels focussed on carbon capture and storage applications for net zero emissions

CCC Net Zero: logistics

- 10% + ?
- Urban consolidation centres
- Extending delivery times: not always just in time
- No return empty
- Smaller boxes
- Data sharing...
- …

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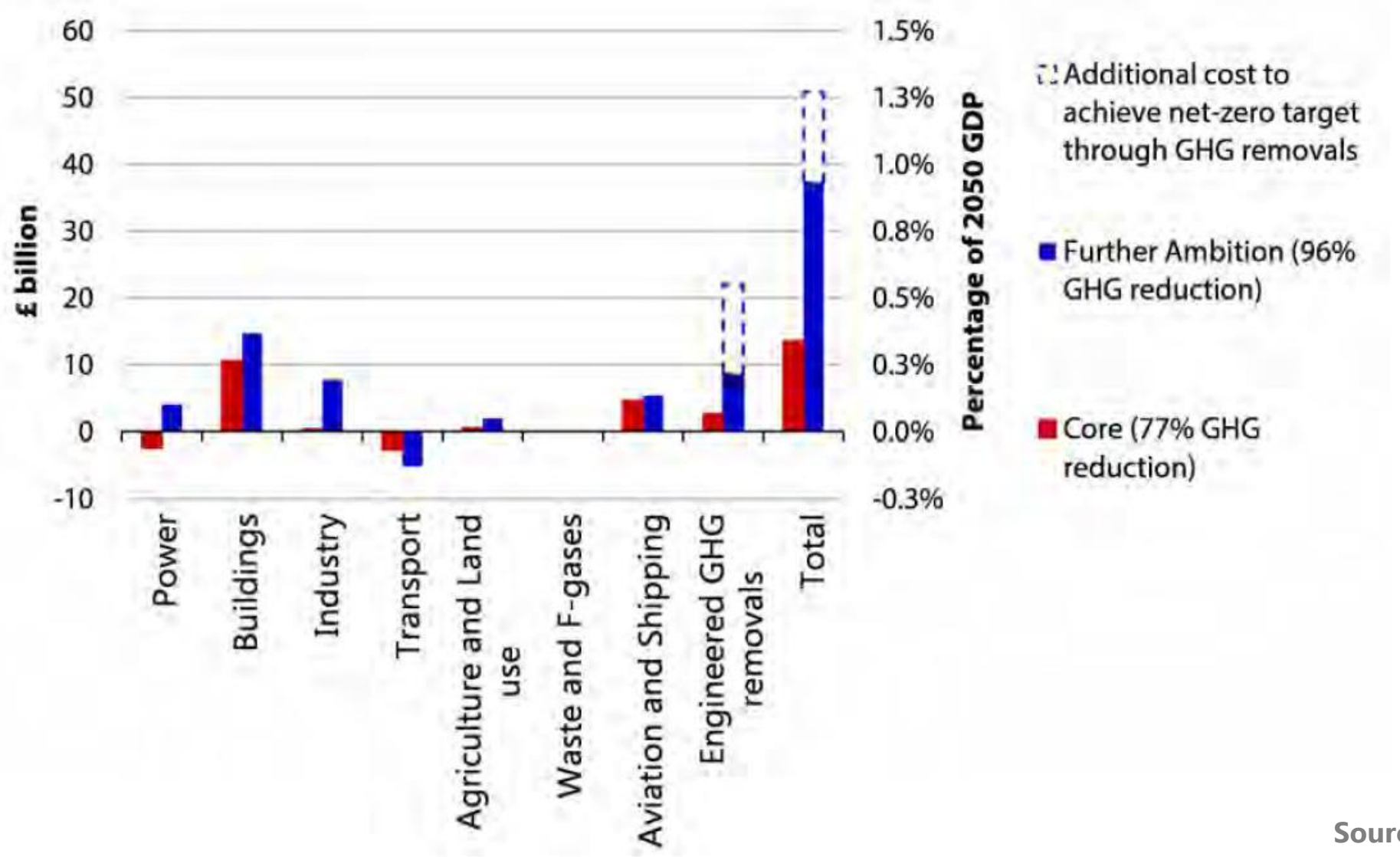
Net zero: transport is the easy part!



Source: CCC analysis