

# Sustainability

MHA Annual Conference

Eoin Harris

# Sustainability

In 1987, the United Nations Brundtland Commission defined Sustainability as:

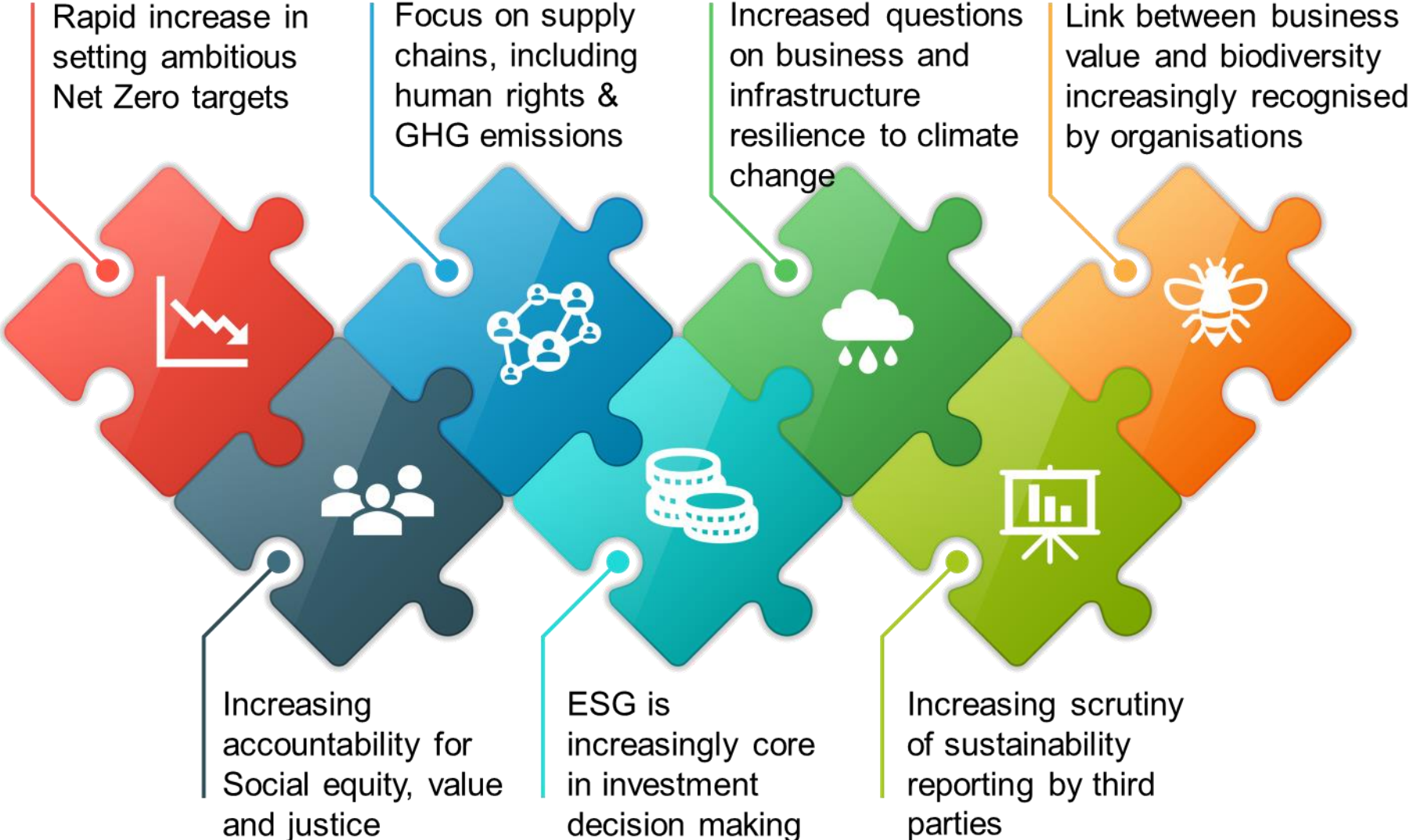
*“meeting the needs of the present without compromising the ability of future generations to meet their own needs.”*



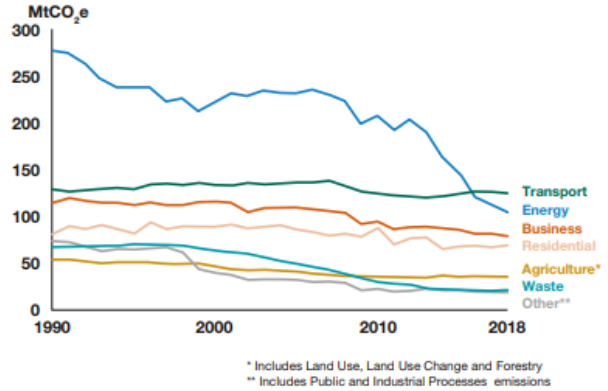
## SUSTAINABLE DEVELOPMENT GOALS



# Sustainability Trends



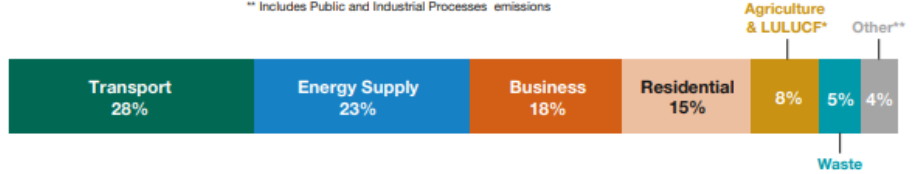
# GHG Emissions from Transport



**Transport became the largest emitting sector of GHG emissions in 2016**

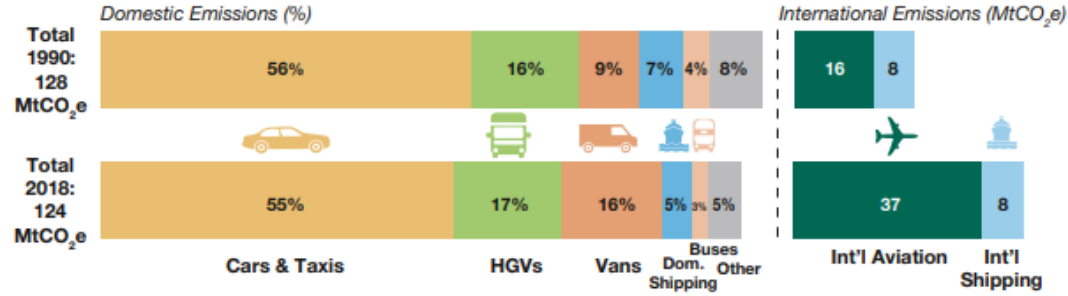
This follows large decreases in energy emissions while transport emissions have remained relatively static.

**451 million tonnes of CO<sub>2</sub> equivalent (MtCO<sub>2</sub>e)** is the total net domestic greenhouse gas emissions from all UK sectors in 2018, down 2.1% from 2017.

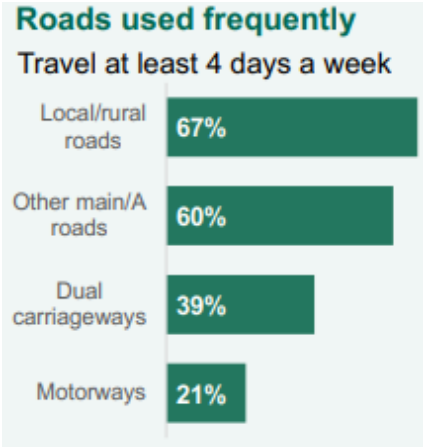
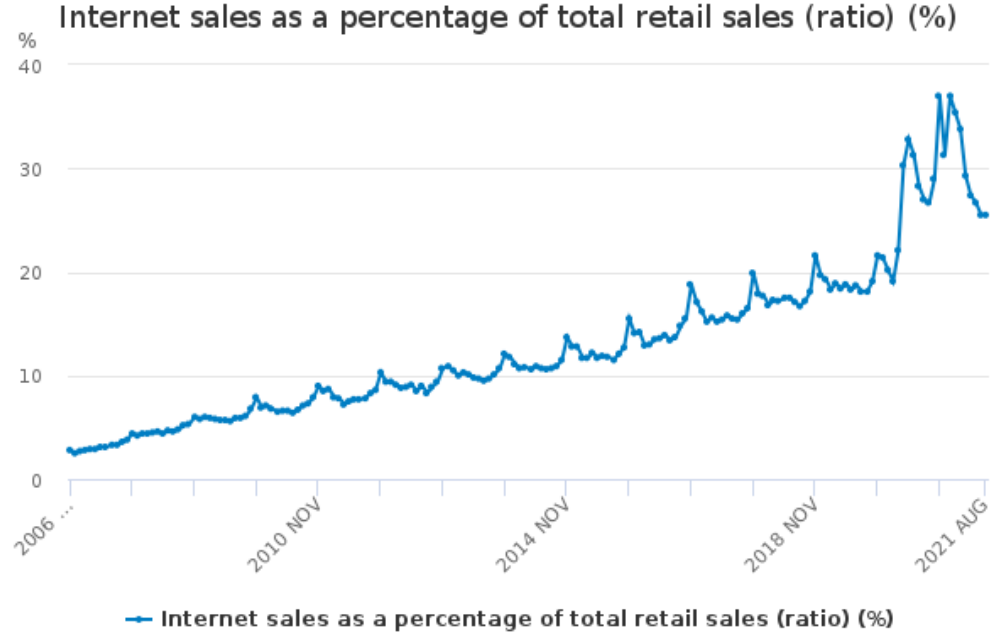


Source: 2018 UK greenhouse gas emissions<sup>10</sup>

## UK Transport GHG emissions by mode, 1990 and 2018



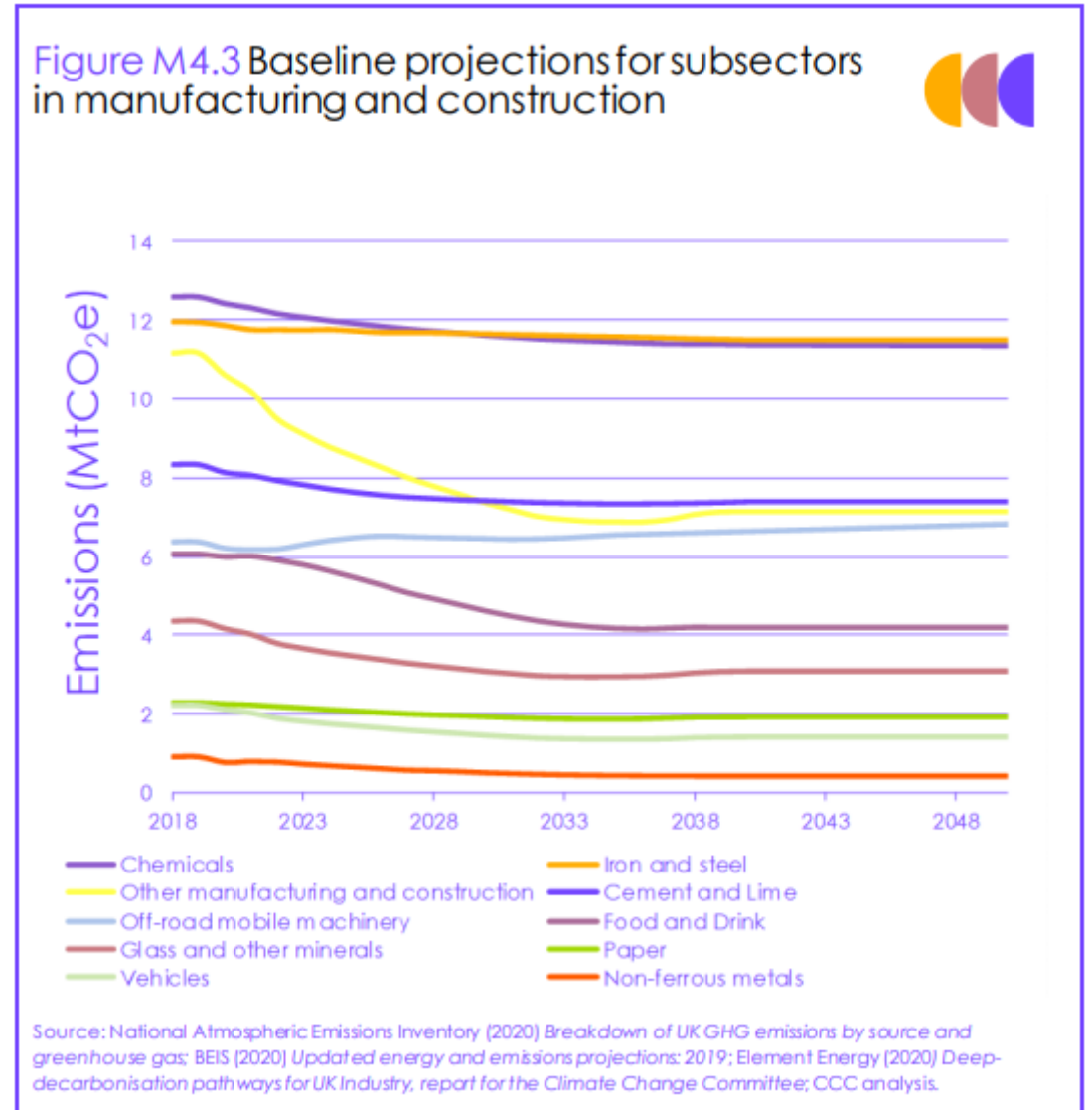
Source: 2018 UK greenhouse gas emissions<sup>12</sup>



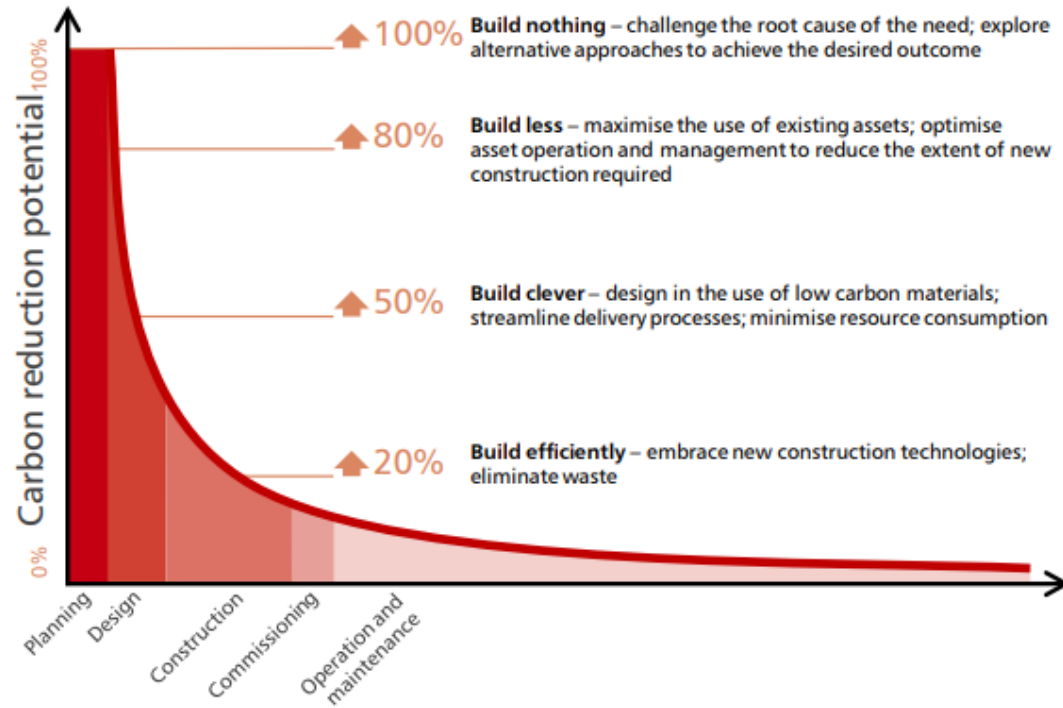
“The 2019-20 survey showed that half of all vans (51%) in Great Britain stayed local, within 15 miles of their base, on a typical day. Just over a third of vans travelled regionally (34%)...” DoT

# Embodied Carbon

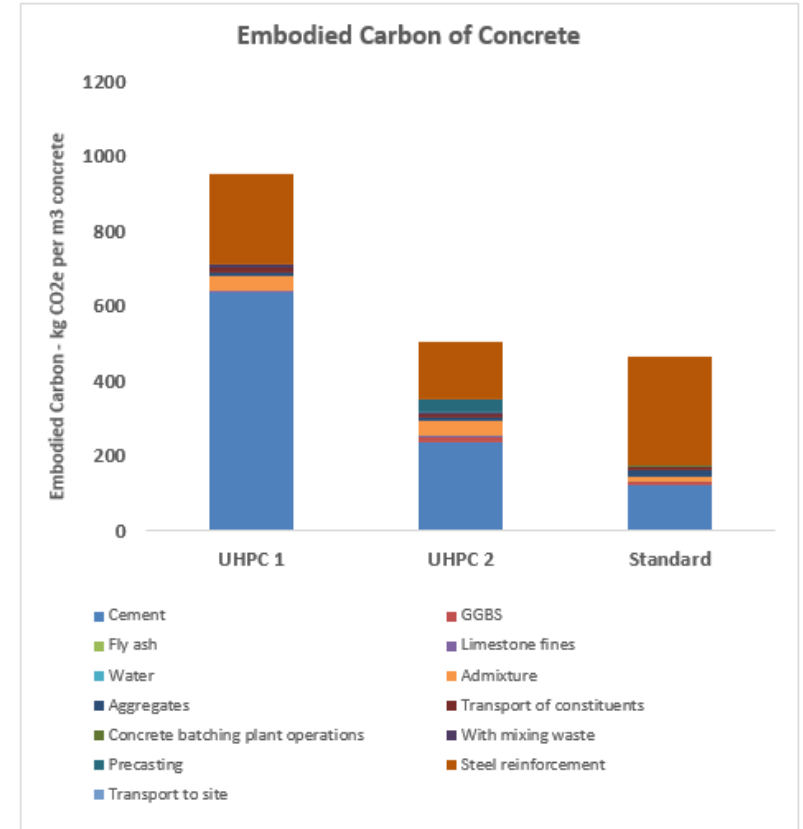
- Embodied carbon: the emissions associated with the manufacture, transport and installation of goods and ‘services’.
- Large, yet frequently overlooked, factor in construction.
- Needs to be considered in the whole life cycle of an asset.
- Concrete and steel are the biggest drivers of CO<sub>2eq</sub> emissions on a project
- Global market for cement replacements
- Consider the combination of engineering systems
- Circular Economy is Key



# Addressing Embodied Carbon



Source: Green Construction Board





# Climate Change Adaptation

- Effects of global warming are ‘locked in’ and we will continue to see rising global temperatures
- Changes will manifest themselves differently by location and season
- Effects and impacts will occur in combination
- Adaptation has ‘physical’ and ‘transitional’ risks
- Typically engineering focussed, but the solutions are reliant on good historic data, modelling and innovation



# Biodiversity

Science & Environment

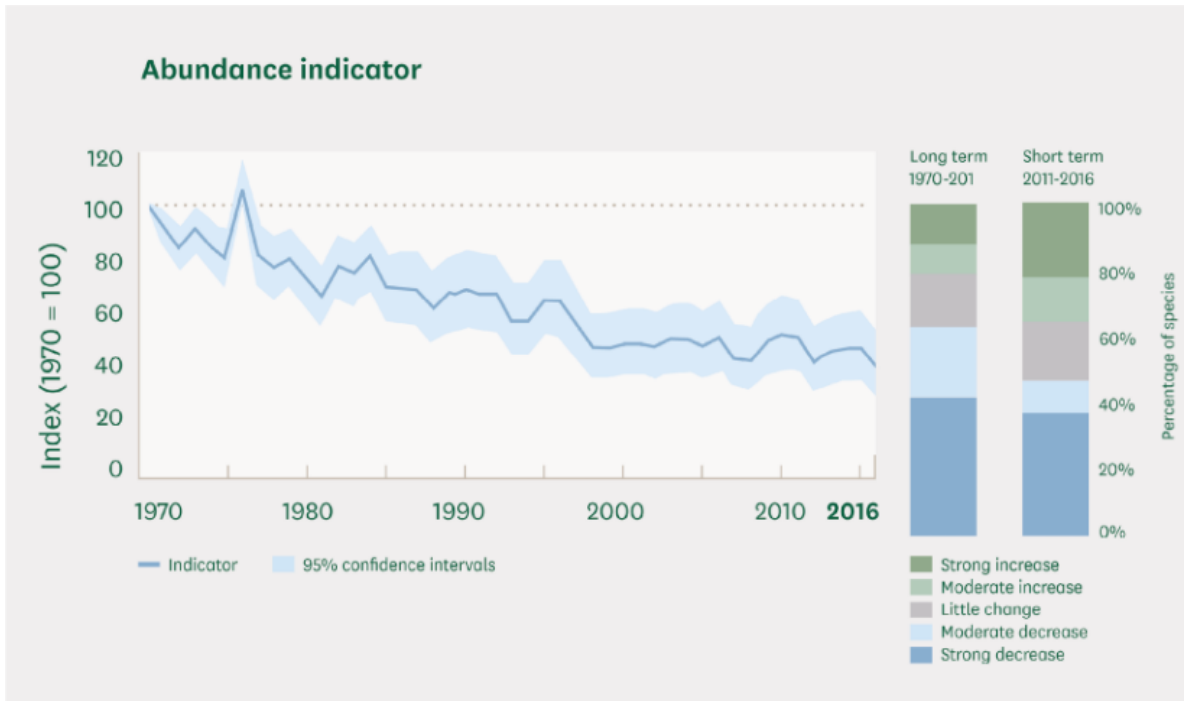
## Biodiversity loss risks 'ecological meltdown' - scientists

By Helen Briggs  
BBC Environment correspondent

🕒 1 day ago



Climate change



- Britain has only half its biodiversity left
- Development and agriculture are the key drivers in UK for biodiversity decline
- Knock-on potential impacts from flooding, pollination, air quality and other ecosystems functions
- Ecological webs are complex
- Wellbeing and social value?



# Air Quality – A Social Issue?

- Southwark Coroners Court ruled that the death of a 9-year old girl from Lewisham was attributable to poor air quality
- 40,000 premature deaths in the UK?
- Socio-economic impact of those living with existing conditions
- Electric vehicles will help, but still a lot of air borne particles from transport
- Construction activities play a significant part

Sector	PHE Rapid Evidence Assessment(s)	PM <sub>10</sub> ↓	PM <sub>2.5</sub> ↓	NO <sub>x</sub> ↓	SO <sub>2</sub> ↓	NH <sub>3</sub> ↓	NMVOc ↓
Agriculture	Industrial Agriculture	10.0%	4.0%	0.8%	N/A	87.6%	14.4%
Energy industries	Industrial Planning	2.7%	3.3%	22.4%	37.3%	0.1%	0.5%
Fugitive emissions	All	1.1%	1.1%	0.2%	1.4%	0.1%	15.8%
Manufacturing industries and construction	Industrial Planning	10.6%	16.1%	15.6%	21.6%	0.7%	2.4%
Industrial processes <sup>1</sup>	Industrial Planning	31.2%	12.9%	0.1%	4.8%	1.3%	54.1%
Residential, and small-scale commercial combustion	Behavioural Industrial	27.9%	43.1%	10.3%	25.5%	0.8%	6.2%
Road transport	Vehicle Planning	11.7%	12.4%	33.6%	0.7%	1.5%	3.9%
Non- road transport <sup>2</sup>	Vehicle Agriculture	2.4%	3.6%	16.8%	8.3%	0.0%	1.6%
Waste	Industrial Planning	2.3%	3.3%	0.2%	0.4%	3.5%	0.8%
Other sources	All	0.1%	0.1%	0.0%	N/A	4.5%	0.4%
<b>Total<sup>3</sup></b>	<b>All</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

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## What are the answers?

### FOCUS ON WIDER OUTCOMES

- The benefits to people and the environment, now and in the future
- With that in mind, what should we do differently?
- Link to the Circular Economy

### QUESTION

- Do we need this intervention?
- What are others doing?
- Why isn't this in the brief/ drawing/ purchase order?

