Department for Transport

Non-exhaust emissions

UK Department for Transport perspective

Moving Britain Ahead

November 2018

Department for Transport

Duncan Kay

International Vehicles Standards - DfT

Moving Britain Ahead

November 2018

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Study links autism to toxic air pollutants

By AUSTRALIAN ASSOCIATED PRESS

PUBLISHED: 13:04, 5 November 2018 | **UPDATED:** 13:04, 5 November 2018

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Young children exposed to toxic air pollutants are autism, new Australian research reveals.

The study of nearly 1500 children in China, aged exposed to fine particles from some outdoor poll likely to develop autism spectrum disorder.

Vehicle exhausts, road dust and emissions from f

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News

Air pollution is behind one in three cases of asthma hospitalisation, stuc finds

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'Thousands of NHS health centres in areas with unsafe levels of air pollution'

UK News | Published: Oct 25, 2018

> Pollution around GP practices, clinics and hospitals could be worsening health conditions for vulnerable people, a study warns.

News ▸ North East News ▸ Conservative Party

Government urged to ban the sale of petrol and diesel cars from 2032

MPs want more support for manufacturers of electric vehicles such as Nissan

Landmark report reveals extent of air pollution damage to the heart and circulatory system

30 October 2018 Rachel Sacks

Category: Research

Particles in air pollution cause a wide range of damaging effects to the cardiovascular system, according to a landmark report published last week.

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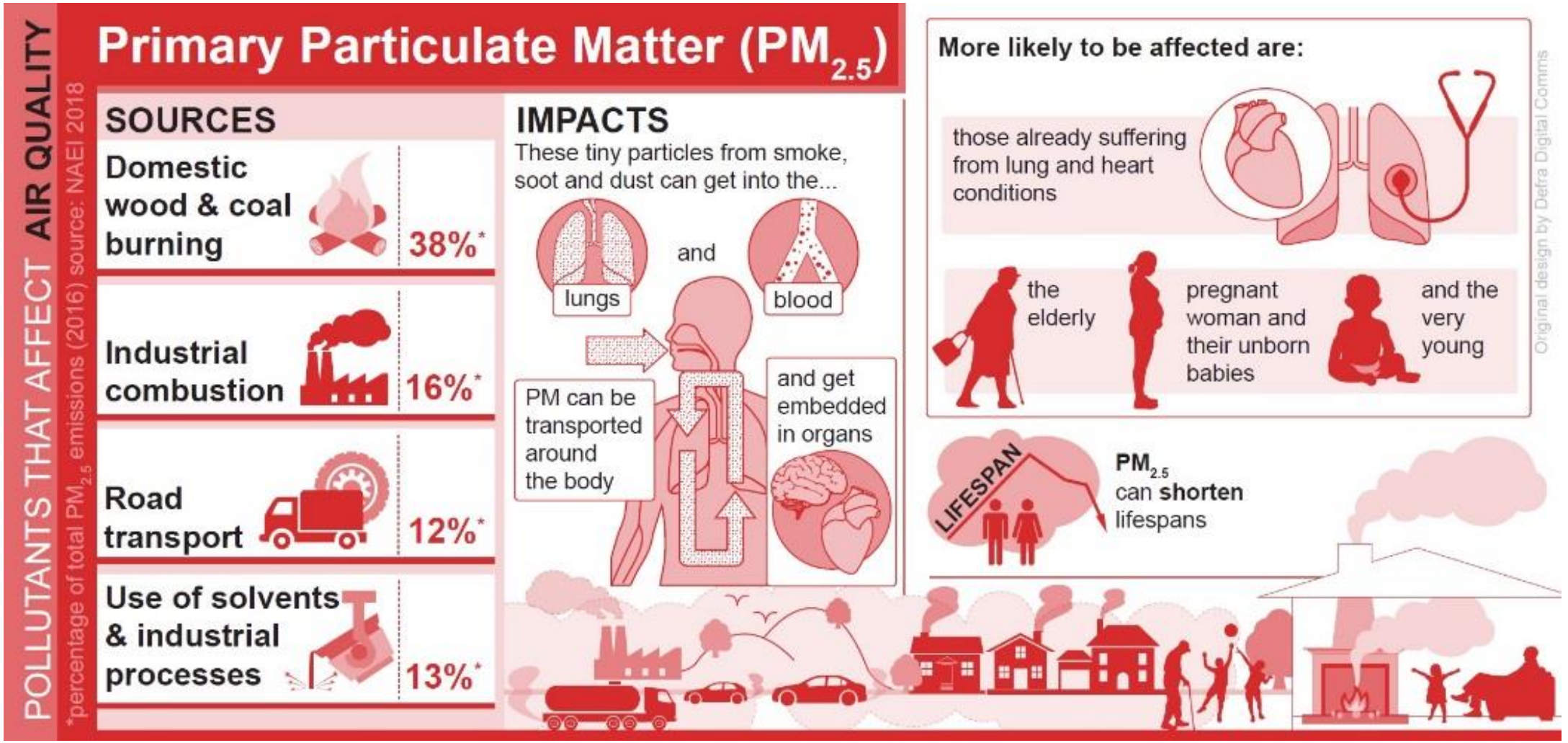
UK sources of particulate matter $PM_{2.5}$



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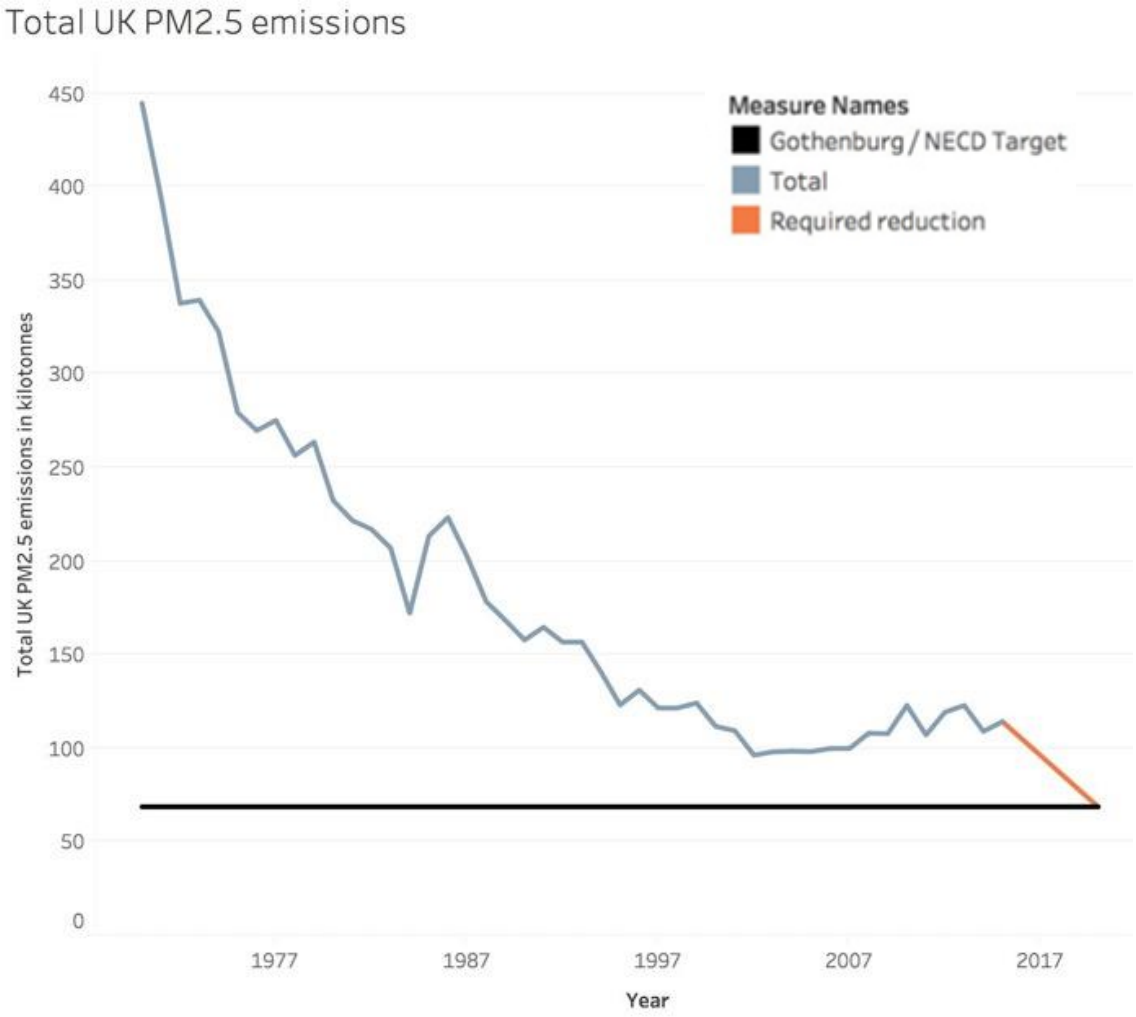
UK air quality particulate emissions target

- **United Nations Economic Commission for Europe**
  - Convention on Long-Range Transboundary Air Pollution
    - Gothenburg Protocol
- **European Union**
  - National Emissions Ceilings Directive
    - National Air Pollution Control Programme



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UK emission reduction commitments for 2020 and 2030 - reduction from 2005 emission levels

	Sulphur dioxide		Nitrogen oxides		Non-methane Volatile Organic Compounds		Ammonia		Fine particulate matter	
Time frame	2020	2030+	2020	2030+	2020	2030+	2020	2030+	2020	2030+
Target	59%	88%	55%	73%	32%	39%	8%	16%	30%	46%
Projected	77%	83%	53%	67%	41%	38%	3%	2%	12%	15%

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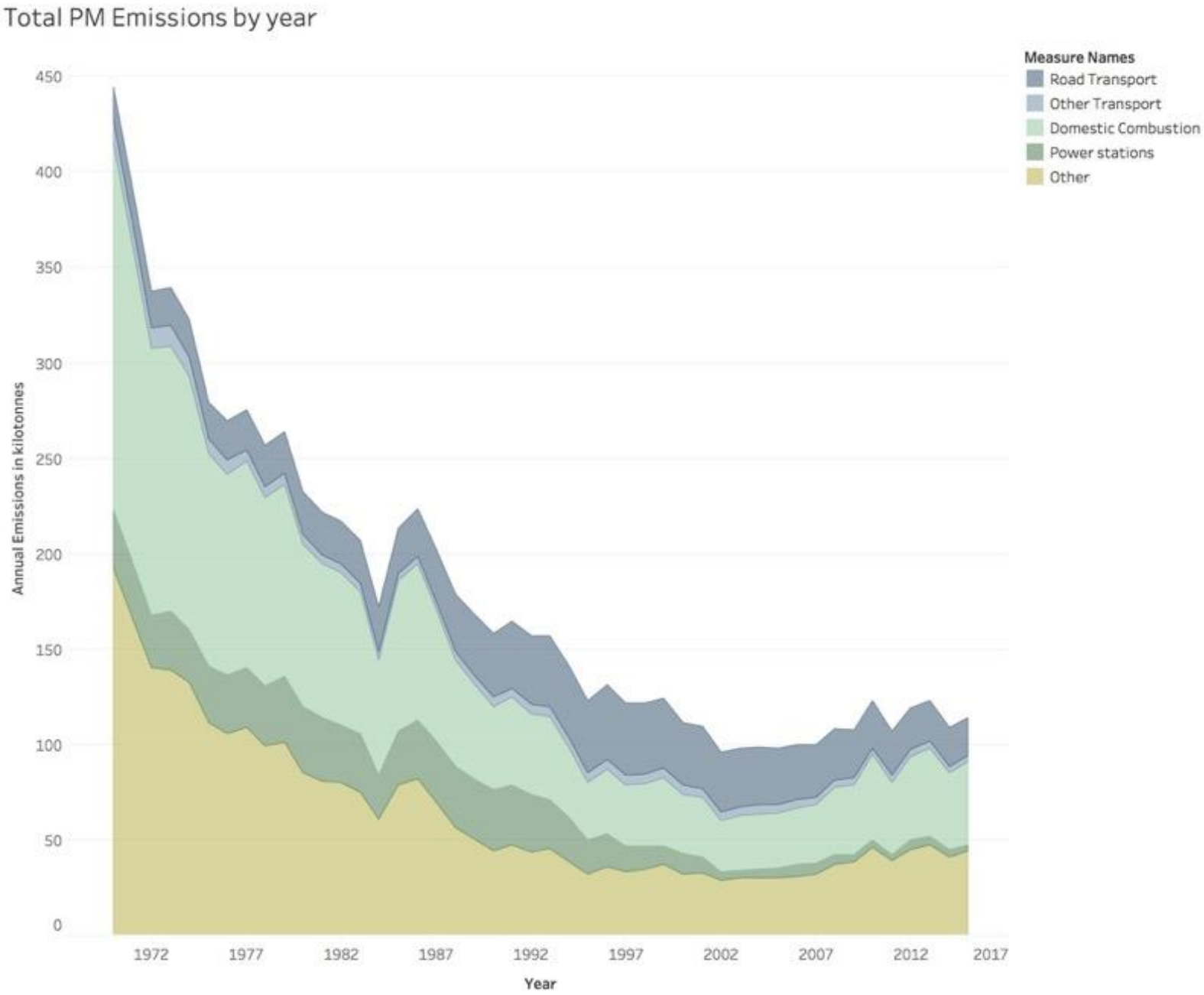
- **Key UK sources of $PM_{2.5}$**
  - **Domestic wood and coal burning – 38%**
  - **Industrial combustion – 16%**
  - **Solvents and industrial processes – 13%**
  - **Road transport – 12%**



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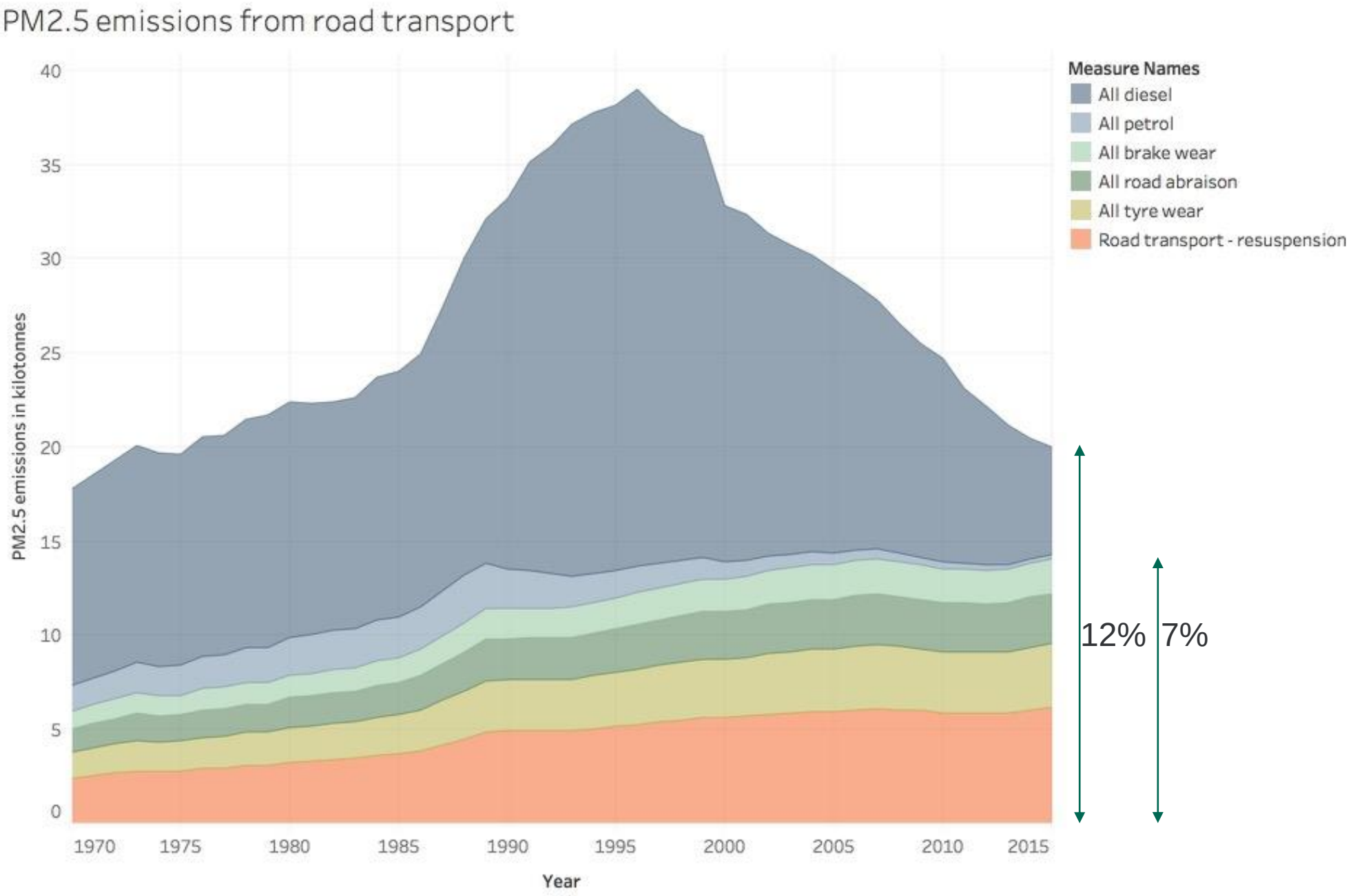

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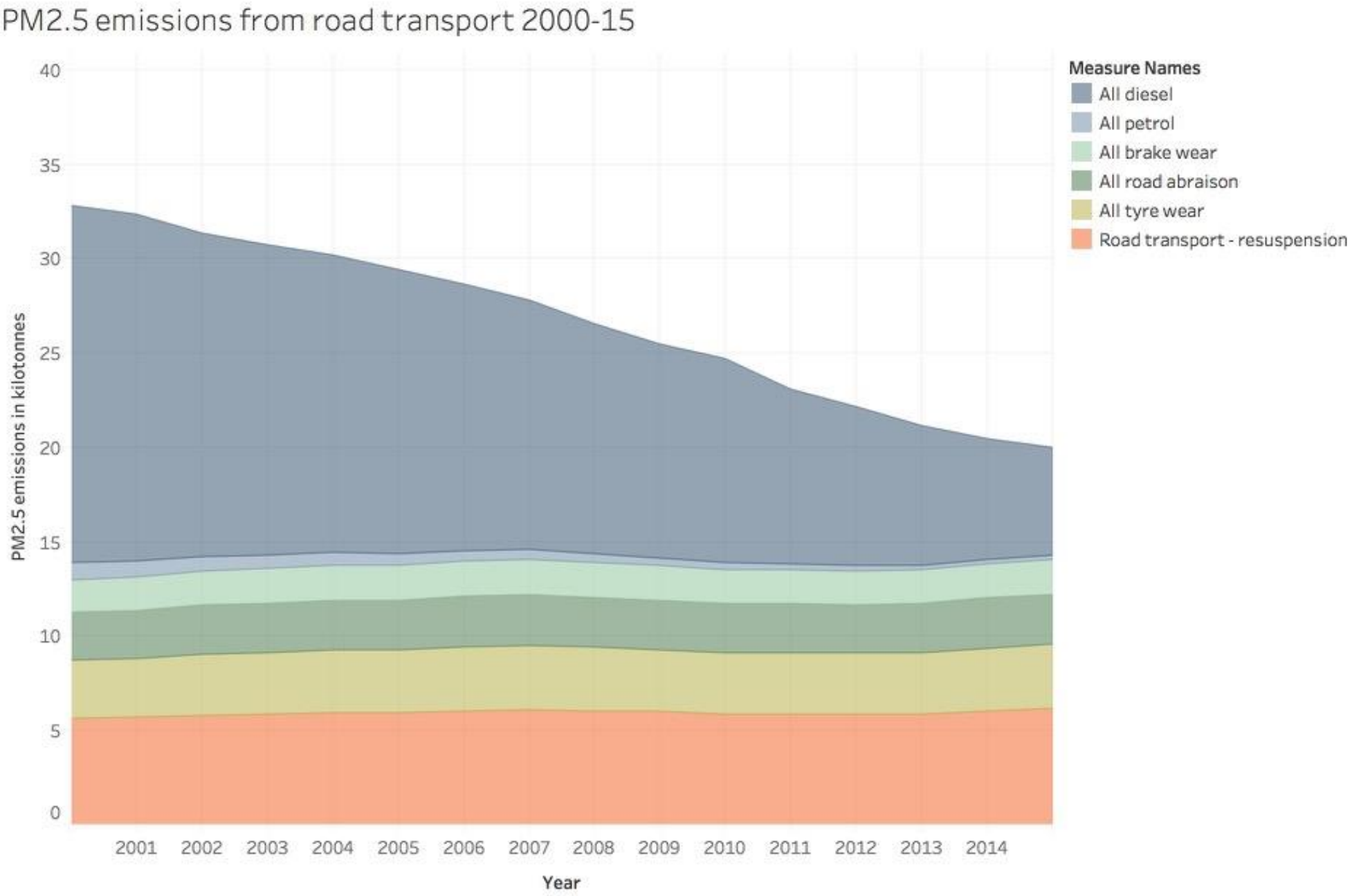
Non-exhaust emissions

- **Currently**
  - **Non-exhaust already exceeds exhaust PM**
- **2030**
  - **Non-exhaust expected to be 10%**
  - **Exhaust expected to be 1%**



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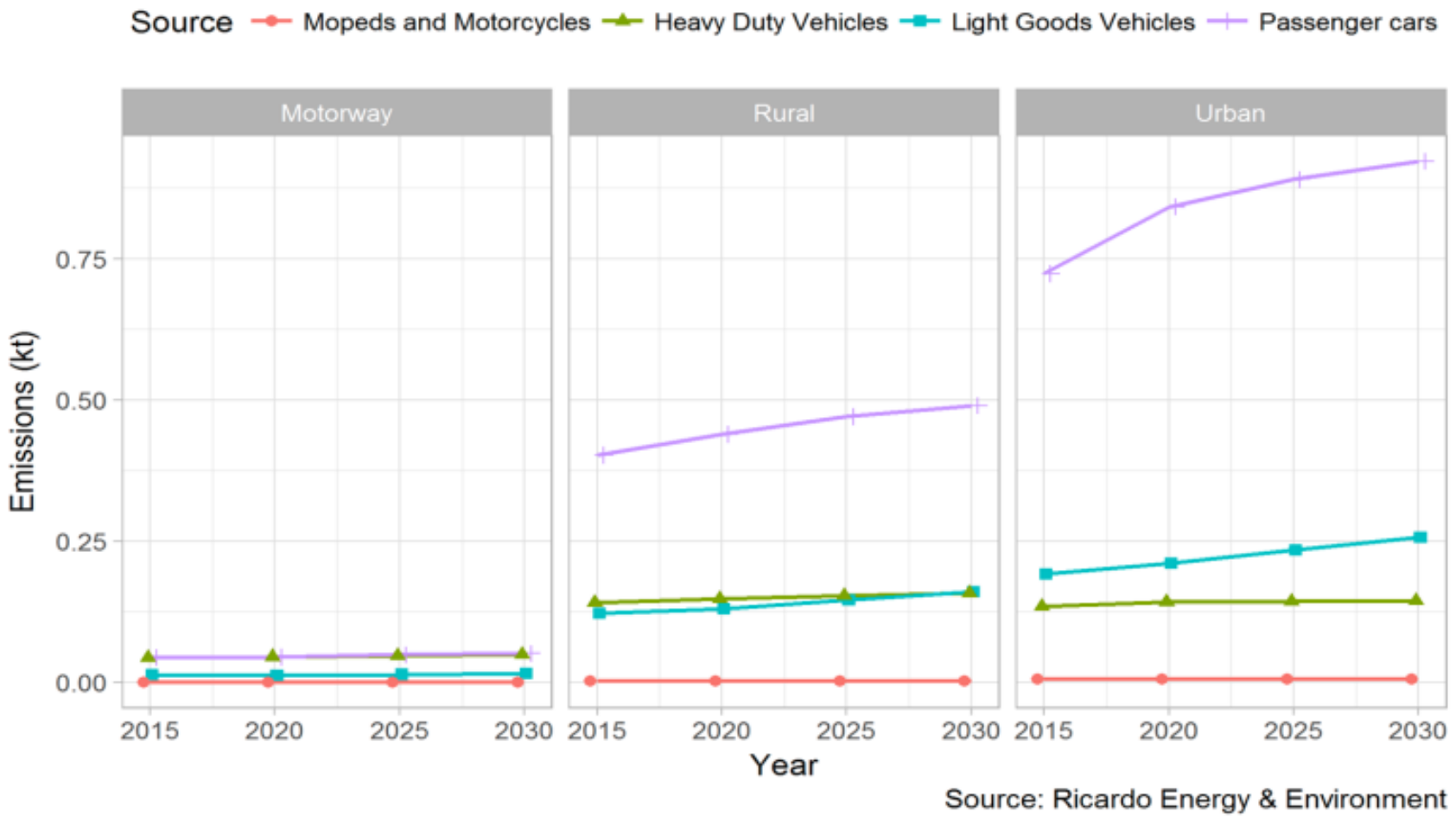
UK $PM_{2.5}$ by vehicle type / location



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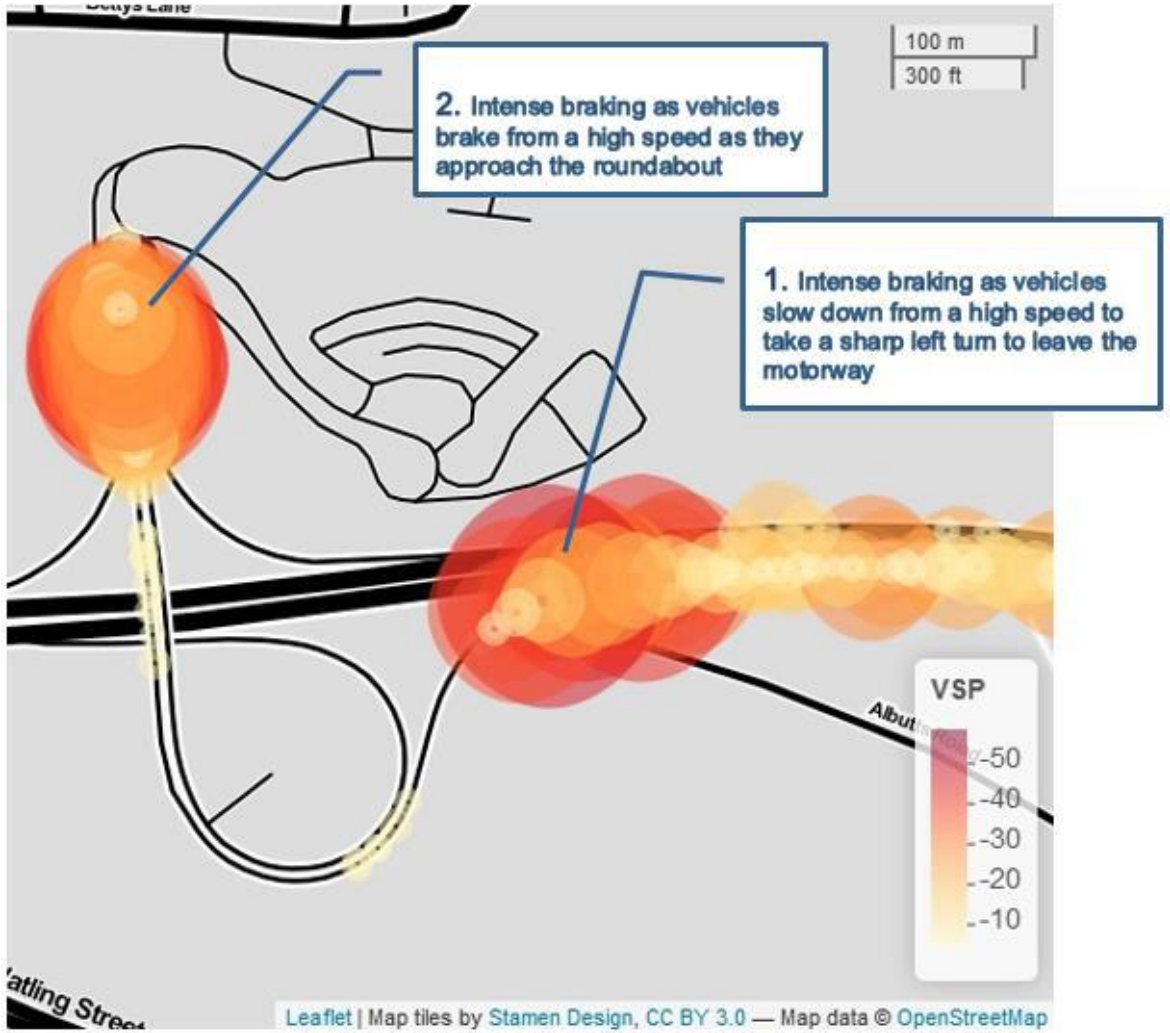
UK brake particulate emissions analysis



Source: Ricardo

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Current UK activity – Clean Air Strategy

- ***"We will end the sale of new conventional petrol and diesel cars and vans by 2040."***
- *"We will undertake a call for evidence on tyre and brake wear. Building on this, we will work with international partners seeking to develop new international regulations for particulate emissions from tyres and brakes through the United Nations Economic Commission for Europe."*
- Consultation on the draft Strategy ended in August, with over 750 responses
- Plan to publish the final Strategy by the end of this year
- The consultation responses will also feed into the proposed Environment Bill, to be laid before Parliament next year

Published: May 2018; Closed August 2018

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Current UK activity – New Environment Bill

- Government will bring forward a new Environment Bill in Parliament to bring the Clean Air Act (1956) up to date next year
- Proposals will halve the number of people living in areas above the World Health Organisation $PM_{2.5}$ guideline level by 2025
- New powers for local government to take action in their areas
- New legislation to compel vehicle manufacturers to recall vehicles for failures in their emission control system


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Science & Environment

Theresa May announces new environment bill

By Roger Harrabin
BBC environment analyst

19 July 2018 Share

EPA

A bill to protect the environment has been announced by the prime minister.

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Current UK activity – The Road to Zero

HM Government

INDUSTRIAL STRATEGY

- Mission to put the UK at the forefront of the design and manufacturing of zero emission vehicles, and for all new cars and vans to be effectively zero emission by 2040.
- **By 2030:** We want to see at least 50%, and as many as 70%, of new car sales and up to 40% of new van sales being ultra low emission (currently CO_2<75 g/km).
- **By 2040:** We expect the majority of new cars and vans sold to be 100% zero emission and all new cars and vans to have significant zero emission capability.
- **By 2050:** We want almost every car and van to be zero emission.

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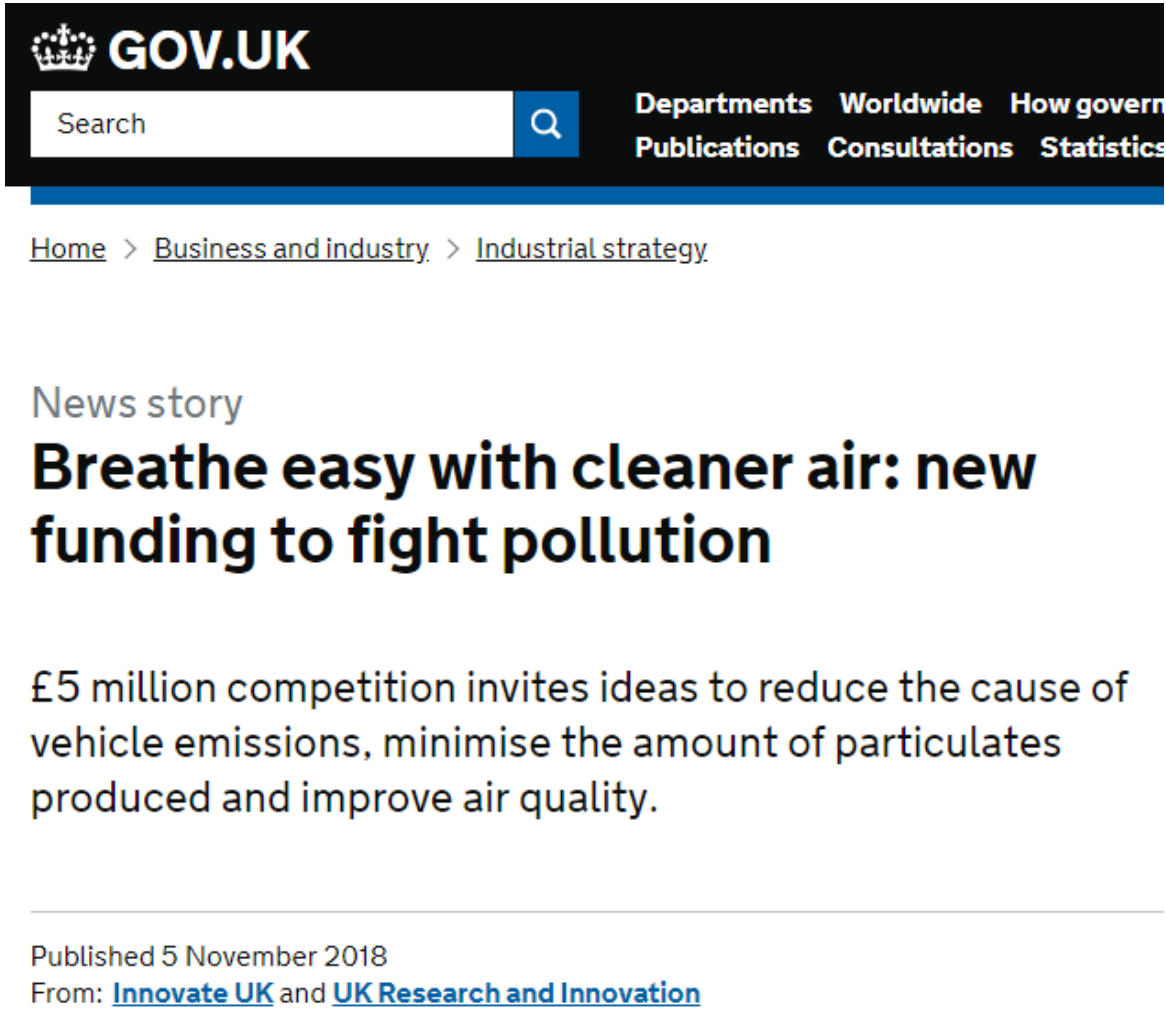
Current UK activity – Research funding

Non-exhaust and non-road pollution

Organisations can win funding to work on ideas that go beyond exhaust and road vehicle fumes:

- emissions, either from road vehicle brake and tyre wear or road surface abrasion
- industrial equipment and non-road vehicles used on construction sites, such as excavators, bulldozers, front loaders, cranes and compressors with combustion engines
- refrigeration units in vehicles including vans or heavy goods vehicles



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News story

Breathe easy with cleaner air: new funding to fight pollution

£5 million competition invites ideas to reduce the cause of vehicle emissions, minimise the amount of particulates produced and improve air quality.

Published 5 November 2018
From: Innovate UK and UK Research and Innovation

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Current UK activity – Air Quality Expert Group

- AQEG is an expert committee of Defra and considers current knowledge on air pollution and provides advice on such things as the levels, sources and characteristics of air pollutants in the UK.
- AQEG reports to Defra's Chief Scientific Adviser, Defra Ministers, Scottish Ministers, the Welsh Government and the Department of the Environment in Northern Ireland (the government and devolved administrations).
- Conducting a review of non-exhaust emissions from road traffic:
  - Characteristics of PM from this emission source (particle size and composition)
  - Factors influencing emissions
  - Fate and behaviour in the environment and contribution to air pollution
  - Abatement methods

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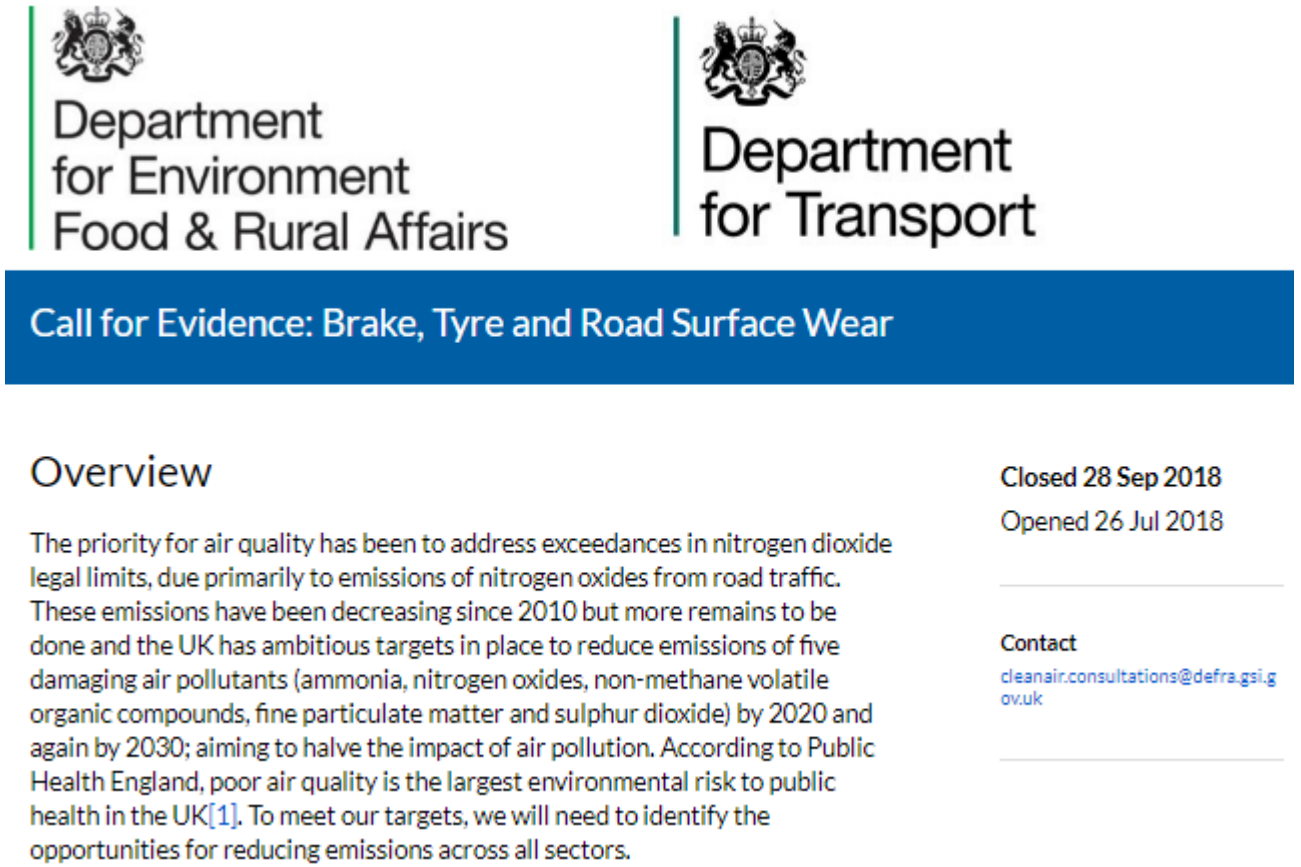
Current UK activity - Call for evidence

Call for Evidence: Brake, Tyre and Road Surface Wear

- Over 50 responses received - mix of individuals, businesses, academics
- Currently reviewing responses
- Many responses highlight benefits of modal shift (and regenerative braking)
- Transport for London has carried out modelling which suggests “more than 90% of transport related particulate in London is from non-exhaust sources”



Department for Environment Food & Rural Affairs

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Call for Evidence: Brake, Tyre and Road Surface Wear

Overview

The priority for air quality has been to address exceedances in nitrogen dioxide legal limits, due primarily to emissions of nitrogen oxides from road traffic. These emissions have been decreasing since 2010 but more remains to be done and the UK has ambitious targets in place to reduce emissions of five damaging air pollutants (ammonia, nitrogen oxides, non-methane volatile organic compounds, fine particulate matter and sulphur dioxide) by 2020 and again by 2030; aiming to halve the impact of air pollution. According to Public Health England, poor air quality is the largest environmental risk to public health in the UK[1]. To meet our targets, we will need to identify the opportunities for reducing emissions across all sectors.

Closed 28 Sep 2018

Opened 26 Jul 2018

Contact

cleanair.consultations@defra.gsi.gov.uk

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Considerations for regulating brake emissions

Some (obvious) observations:

- Legislation must improve health by achieving real-world reductions
- Likely to be policy desire for legislation to cover all vehicles
- Legislation must not compromise safety

Some questions:

- Can / should test results aim to reflect whole vehicle brake emissions?
- Can / should test results aim to allow relative ranking of whole vehicle brake emissions?
- Can / should legislation should be technology neutral?

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Thank you

Duncan.Kay@dft.gov.uk