TACKLING POLLUTION IN LONDON

Elliot Treharne
Air Quality Manager
'Oxford Street pollution levels breached EU annual limit just four days into 2015'

Nicholas Cecil | Tuesday 6 January 2015
Putney High Street breaches annual diesel pollution limit eight days in to 2016
HOW POLLUTION OCCURS

Source: Explaining road transport emissions, EEA
PARTICULATE MATTER

- London has met legal requirements for PM$_{10}$ since 2011. However, it remains a localised issue requiring a targeted approach.
PM$_{2.5}$ EMISSIONS IN 2013

Road transport 55%

Non Road Mobile Machinery 15%

Industry 6%

Gas - Non-Domestic 2%

Gas - Domestic 3%

Domestic and Commercial other Fuels 4%

Other 8%

Resuspension

Aviation 2%

River 1%

Rail 2%

Taxi 3%

TfL Bus 3%

Non-TfL Bus and Coach 1%

Petrol Car 14%

Van and Minibus 10%

HGV 6%

Motorcycle 1%

Diesel Car 17%
PARTICULATE MATTER – NON-EXHAUST EMISSIONS

The chart illustrates the percentage of particulate matter (PM) emissions for different vehicle types, broken down into exhaust and tyre and brake wear contributions.

- **Motorcycle**: PM emissions from exhaust are significantly higher compared to tyre and brake wear.
- **Car**: Similar trend with a higher percentage from exhaust.
- **Taxi**: Exhaust emissions dominate, but the difference is less significant compared to other vehicle types.
- **LGV**: Shows a balanced contribution from both exhaust and tyre and brake wear.
- **HGV**: Both sources contribute equally to PM emissions.
- **Bus and Coach**: Exhaust emissions are slightly higher than tyre and brake wear.
- **TOTAL**: The chart shows the overall contribution from both sources, with exhaust emissions being the primary contributors for most vehicle types.

The chart indicates that for most vehicle types, exhaust emissions account for a larger proportion of PM emissions, with the exception of LGV and HGV, where the contributions from both sources are more balanced.
$\text{NO}_2$ – A EUROPE WIDE CHALLENGE

Nitrogen Dioxide (NO2) in Europe

European Environment Agency
NO$_2$ CHALLENGE IN 2013

NO2 Annual Mean (µg/m3)
- 97
- 76
- 73
- 58
- 55
- 43
- 40
- 37
- 34
- 31
- 28
- 25
- 22
- 19
- 16
- 13

← Legal limit
**NO\textsubscript{x} EMISSIONS IN 2013**

- **Road transport**: 50%
  - Diesel Car: 12%
  - Petrol Car: 6%
  - TfL Bus: 10%
  - HGV: 11%
  - Taxi: 2%
  - Non-TfL Bus and Coach: 3%
- **Non-specified**: 1%
  - Van and Minibus: 6%
  - Motorcycle: <1%
- **Industry**: 7%
- **Gas - Non-Domestic**: 12%
- **Gas - Domestic**: 12%
- **Resuspension**: <1%
- **Aviation**: 8%
- **Other**: 1%
- **Rail**: 3%
- **Domestic and Commercial other Fuels**: 3%
- **River**: 1%
- **Non Road Mobile Machinery**: 7%
NO$_2$ CHALLENGE IN 2025

NO$_2$ Annual Mean (ug/m$^3$)
- 97
- 76
- 73
- 58
- 55
- 43
- 40
- 37
- 34
- 31
- 28
- 25
- 22
- 19
- 16
- 13

← Legal limit
HEALTH AND EQUALITIES

Health
• We estimate an equivalent of up to around 9,400 deaths were caused by long-term exposure to air pollution.
• A baby born in 2010 and exposed to that same level of air quality for its entire life would lose 2.2 years (if male) and 2 years (if female) of life expectancy.

Fairness
• The health impacts associated with air pollution fall disproportionately on our most vulnerable communities, affecting the poorest and those from minority ethnic groups more acutely.
• Tackling air pollution is about social justice and there is an urgent need to do more to tackle public health inequalities.
PUBLIC PERCEPTION

Satisfaction vs. Rank

- Clean air
- Flood and drought protection
- Energy efficiency
- New and affordable energy
- Good parks and green spaces
- Reuse and recycling
- Clean streets
- Thriving plants and animals

 avaliações de satisfação e ranking.
NEW MAYORAL PRIORITY

• The Mayor held a consultation on a number of measures within weeks of coming into office.

• Over 15,000 people responded and we recently started a second consultation with more detailed information.

“...we need big, bold and sometimes difficult policies if London is to match the scale of the challenge.”

www.london.gov.uk/cleanair
“We now have to face the reality that if we are going to come close to tackling air pollution in London, we have to tackle the problem of dirty diesels too.”

Sadiq Khan, Mayor of London
5th July 2016
DIESELISATION

New UK car sales 2003 – 2014

Year

Petrol
Diesel

Source: SMMT
‘BENDING THE RULES’…

Source: Explaining road transport emissions, EEA
DIESEL PERFORMANCE

On-road measured value (Carslaw, 2011) / (ICCT, 2014)

Euro emission limit
Euro 4 petrol is an equivalent NO\textsubscript{x} standard to Euro 6 diesel.
Only 1 in 6 of all new diesel cars have been shown to meet the Euro 6 standard in ‘real world’

The new work undertaken by Emissions Analytics could help consumers make an informed choice and strengthen our procurement practices.
## Passenger Car Drive Cycle Average Results

<table>
<thead>
<tr>
<th>Mkt Segment</th>
<th>Fuel</th>
<th>NOX</th>
<th>PM</th>
<th>CO2</th>
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<tr>
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<td>Type Approval limit</td>
<td>Test average</td>
<td>Type Approval limit</td>
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<td>Hybrid REEV</td>
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<td>0.001</td>
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# Goods Vehicle Cycle Average Results

<table>
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<th>PM</th>
<th>CO2</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Gross Vehicle Weight</td>
<td>Test average 0% payload</td>
<td>Test average 100% payload</td>
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<tr>
<td></td>
<td></td>
<td>kg</td>
<td>g/km</td>
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<td>N3 Artic HGV</td>
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<td>40000</td>
<td>1.407</td>
<td>1.188</td>
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</tbody>
</table>
AIR QUALITY ALERTS

• The Mayor wants to better inform Londoners when air quality is at dangerous levels.

• During and on the day before high and very high air pollution days, air quality alerts will be displayed at:

  – 2,500 bus countdown signs and river pier signs.
  – 140 road signs, with instructions to switch engines off when stationary to reduce emissions.
  – The entrance of all 270 London Underground stations.
LOW EMISSION NEIGHBOURHOODS

- Five flagship £1m Low Emissions Neighbourhoods were announced in July:
  - Westminster – Marylebone
  - Hackney, Islington and Tower Hamlets – City Fringe
  - City of London – Barbican
  - Greenwich – Town Centre and Trafalgar Road
  - Redbridge and Newham – Ilford Garden Junction
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CLEANER BUSES

- The Mayor expects TfL to lead by example and has proposed a number of improvements to the bus fleet:
  
  - **Only hybrid or zero-emission** buses from 2018
  - **Euro VI compliance** in central London by 2019
  - **Expanding the ULEZ retrofit** programme to 3,000 buses outside the central zone (over 5,000 buses in total)
  - **New low emission bus zones** – tackling pollution hotspots by concentrating cleaner buses on the dirtiest routes.
CLEANER TAXIS

- The Mayor wants to deliver the greenest taxi fleet in the world by:
  - No more new diesel taxis and only ‘zero emission capable’ from 2018;
  - Providing a £3,000 grant towards the first 9,000 ZEC taxis;
  - Delivering a rapid charging network from 2017;
  - Introducing a scrappage scheme for the oldest taxis from 2017;
  - Exploring options to convert to a cleaner fuel;
  - Rewarding drivers who pioneer green technology.
CLEANER PRIVATE HIRE

- From 2018 all PHVs presented for licensing for the first time must meet either:
  - Euro 6 (diesel/petrol) standards
  - At least Euro 4 (petrol-hybrids) emissions standards.
- From 2020:
  - All newly manufactured PHVs (less than 18 months old) presented for licensing for the first time must be zero emission capable (ZEC).
- From 2023:
  - All PHVs presented for licensing for the first time must be ZEC.
EMISSIONS SURCHARGE

• We will be consulting on an emissions surcharge (T-charge) on older polluting vehicles entering central London from 2017.

  – A £10 charge during Congestion Charge hours
  – On top of the existing £11.50 congestion charge
  – For pre-Euro 4/VI vehicles (generally those registered up to and including 2005)

• In July, there was strong support from the public – 81% of Talk London respondents and 62% of TNS respondents support.
ULTRA LOW EMISSION ZONE

Euro 4 petrol (<13-14yrs old in 2020)  ...or £12.50 a day
Euro 6 diesel (<4-5yrs old in 2020)  ...or £12.50 a day
Euro VI (<6yrs old in 2020)  ...or £100 a day

Exempt but new licensing requirements
NEW ULEZ PROPOSALS

Central London ULEZ in 2019 (all vehicles)

- £12.50 per day

- £100 per day

Londonwide ULEZ, as early as 2019, but possibly later (heavy vehicles)

- Up to £100 per day

Inner London ULEZ, as early 2019, but possibly later (all vehicles)

- Up to £100 per day

- Up to £12.50 per day

Emission standards

- Petrol: Euro 4
- Diesel: Euro 6
- Motorcycle and L-Cat: Euro 3
NON-TRANSPORT MEASURES

AQ Neutral: Positive?

Retrofit

Construction

Local measures

Mayor’s AQ Fund

Health

AIR QUALITY IN WANDSWORTH: A GUIDE FOR PUBLIC HEALTH PROFESSIONALS

MAYOR OF LONDON
NON-ROAD MOBILE MACHINERY (NRMM) SPG

• We have supplementary guidance to support the policies in the London Plan:
  
  – the Air Quality Statement;
  – the identification of the potential scale of dust emissions for each stage of work;
  – the identification of the level of risk due to the scale of dust emissions
  – best practice methods for controlling dust on-site and to prevent trackout
  – recommendations for monitoring
  – emission standards for non-road mobile machinery
GOVERNMENT’S ROLE

• The Mayor is doing everything he can but Government needs to ensure they are using their powerful policy levers in a complementary way:

  – **VED reform / devolution**, to start reversing dieselisation and to promote cleaner vehicles

  – **A national diesel scrappage scheme**, to help people meet new emission standards

  – **A new Clean Air Act**, enshrining the right to clean air while providing local authorities with the powers they need to tackle emissions from sources like construction and river vessels
21 November judgement:
1. Draft plan for consultation published by 4pm on 24 April 2017;
2. Final plan published by 4pm on 31 July 2017