



Low Emission Vehicle Policy Development in London

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London's Road Network

- There are around 28m transport trips in London every day.
- Over 80% of all passenger journeys, including:
 - around 10m car trips;
 - 6 million bus journeys;
 - 5million walking trips;
 - 0.5m cycling trips;
 - 0.2m taxi journeys;
 - nearly all freight movements,use the road network in London.



But London is a growing city: London Plan predicts 1 million more people & 750K more jobs in London by 2031.



TfL's environmental objectives include:

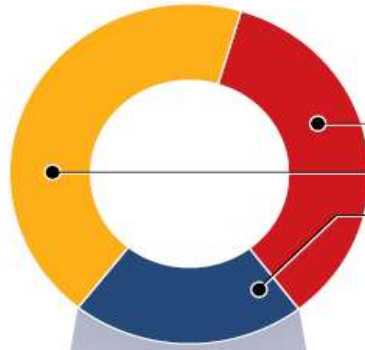
- Contributing to London's climate change target of a 60% reduction in the City's CO₂ emissions by 2025, from a 1990 base
- Reduce PM₁₀ and NO_x emissions (in particular, at key locations on the road network) across the City



Transport & CO₂

2008 London CO₂ emissions

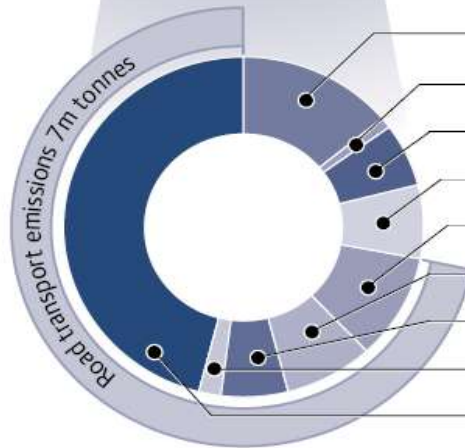
Total emissions 44.7m tonnes



Homes	35%
Workplaces	43%
Ground-based transport	22%

2008 London ground-based transport CO₂ emissions

Ground-based transport emissions 9.7m tonnes



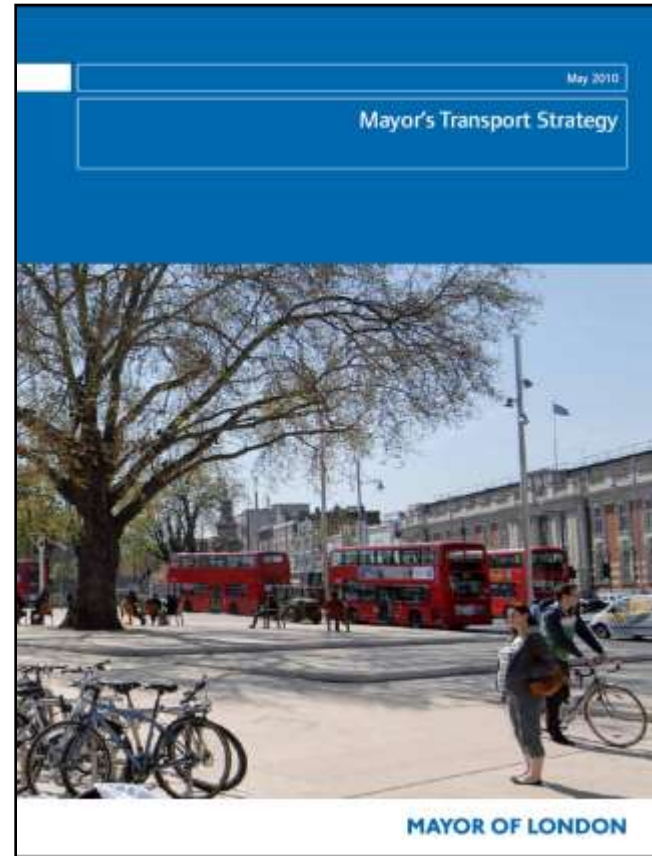
Ground-based aviation*	14%
DLR, trams and shipping	1%
National Rail	6%
Underground	7%
HGVs	10%
LGVs	8%
Buses and coaches	6%
Taxis	2%
Cars, motorcycles and PHVs	46%



The Mayor's Transport Strategy & CO₂

3 Themes:

- Improved operational efficiency
- Supporting & enabling the development of low carbon vehicles
- Promoting carbon efficient mode choice



The Mayor's Air Quality Strategy

- The second Mayor's Air Quality Strategy was published late 2010
- Two key air pollutants are NO₂ and Particulate Matter (PM₁₀)
- Poor air quality is known to cause respiratory and cardiovascular conditions and is linked to over 4,000 premature deaths a year
- Most of London meets PM₁₀ EU limits.
- Road transport contributes 80% of PM emissions in London.



Targets are for a 40% reduction in PM₁₀ and 50% in NO_x emissions from road transport by 2017/18



TfL Strategies to Reduce Emissions

- The Low Emission Zone
- Reducing emissions from London's bus fleet
- Cleaning up London's taxi and private hire vehicle fleet
- Encouraging uptake of Electric Vehicles
- Measures to smooth traffic flows
- Promoting carbon efficient mode choice



London Low Emission Zone (LEZ)

LEZ covers Greater London (1,580 square kilometres)

Targets the oldest and most polluting vehicles so encourages vehicles driving in London to become cleaner

Operates 24 hours a day, every day of the year



Introduced in 2008 to target HGVs, buses and coaches

In January 2012 more vehicle classes were included and standards for PM were tightened



Hybrid Bus Development

The hybrid buses combine diesel engine and electric motor and use regenerative braking technology

- 249 hybrid buses now in service
- 300 hybrid buses in service by end of 2012



Compared with regular diesel buses, Hybrids deliver:

30% reduction in CO²
21% reduction in NO_x
30% reduction in fuel use



A New Bus for London



- The New Bus for London uses the latest diesel-electric hybrid technology.
- First bus now in service - 7 more buses due by June 2012.
- In test conditions, the New Bus for London:
 - produces less than half the CO₂ and half the NOx emissions of conventional diesel buses
 - is twice as fuel efficient as a diesel bus and a third more fuel efficient than current hybrid buses.



Other Bus Developments

Hydrogen Bus Project:



- 8 buses - 5 in service and 3 due in 2012
- Zero vehicle emissions
- In regular service on one bus route up to 20 hours every day

Greening Existing Buses:

- TfL has already retrofitted Diesel Particulate Filters (DPF) to ensure that all 8500 buses meet Euro IV PM₁₀ standard
- Now Retrofitting 900 buses with Selective Catalytic Reduction (SCR) to reduce No_x emissions by up to 90%



London's Taxis and Private Hire Vehicles

- Around 22,000 licensed taxis and 50,000 private hire vehicles (minicabs)
- Contribute around 20% of harmful emissions from ground transport in Central London
- 15 year age limit for taxis and 10 year age limit for private hire vehicles introduced
- Age limits encourage taxi and PHV drivers to switch to Euro 5 compliant vehicles
- Taxi marshalling and no-idling initiatives
- TfL and Mayor working with taxi and vehicle manufacturers to develop a low emission taxi



Electric Vehicle Development

Electric Vehicle Delivery Plan
Launched in Seoul, May 2009

**100,000 Electric Vehicles in London
as soon as possible**

- Charging Infrastructure
- Incentives & Information
- Vehicles



Are EVs right for London?

Electric Vehicles...

- Emit 40% less CO₂ using UK grid mix – potentially zero carbon in the future
- No tailpipe emissions
- New, rapidly-growing technology attracting investment
- Potential to contribute 10-15k jobs and £600m annually to London's economy by 2025



Charging Infrastructure

- Comprehensive Public Network - **No Londoner to be more than 1 mile from public charging point**
- Employee car parks to offer workplace charging points

Source London

- Launched May 2011
- 600 charge points are currently available across London
- All charge points are accessed by a smart card
- Membership £10, then electricity free
- Siemens delivering back office and IT support



Incentives & Information

London

- 100% Congestion Charging discount
- Free parking in some boroughs

National

- Tax breaks
- ‘Plug in Car Grant’ - Rebate up to £5000/25% (available since Jan ‘11)
- ‘Plug in Van Grant’ – Rebate up to £8,000/20% (soon to be available)

Promotion

- Pan UK branding www.sourcelondon.net

Includes:

- a list of vehicles available, their cost and the vehicle range
- case studies of Londoners and London businesses using EVs



**Cost of entry
from Jan 2011
£10 per day**

**Cars emitting
<100gCO₂/km
FREE**



Integrating purchasing power

TfL has Developed 2 procurement frameworks

- 1. To purchase up to 1,300 electric vehicles**
 - 2. To purchase £30M infrastructure**
- Economies of scale
 - Standardisation and interoperability
 - Both frameworks run until 2015 and can be used by all public authorities in Greater London
 - 18 Manufacturers included on the vehicle framework



EVs and the Olympics

Vehicles

LOCOG will have 200 electric vehicles in their Olympic fleet



Infrastructure

120 electric vehicle charge points are being installed and around Olympic venues to support the LOCOG vehicles



Non-Vehicle Solutions



Trial of **Cleaning and Application of Dust Suppressants** to reduce airborne PM



Green Infrastructure
– green walls and tree planting to trap PM



Campaign to reduce unnecessary **Engine Idling**



Traffic Signals

Dynamic traffic signal control (SCOOT) continually adjusts traffic signal timings; reducing delay and stop/start conditions hence reduction vehicle emissions.

- 6000 sets of traffic signals in London
- Over 2500 now with SCOOT
- Over 3000 by 2014



On average, reduces number of times vehicles have to stop at signals by 4%, and traffic delays by 12%, leading to lower overall emissions across the network:

Average carbon emissions reduced by 8%

PM10s reduced by 6%

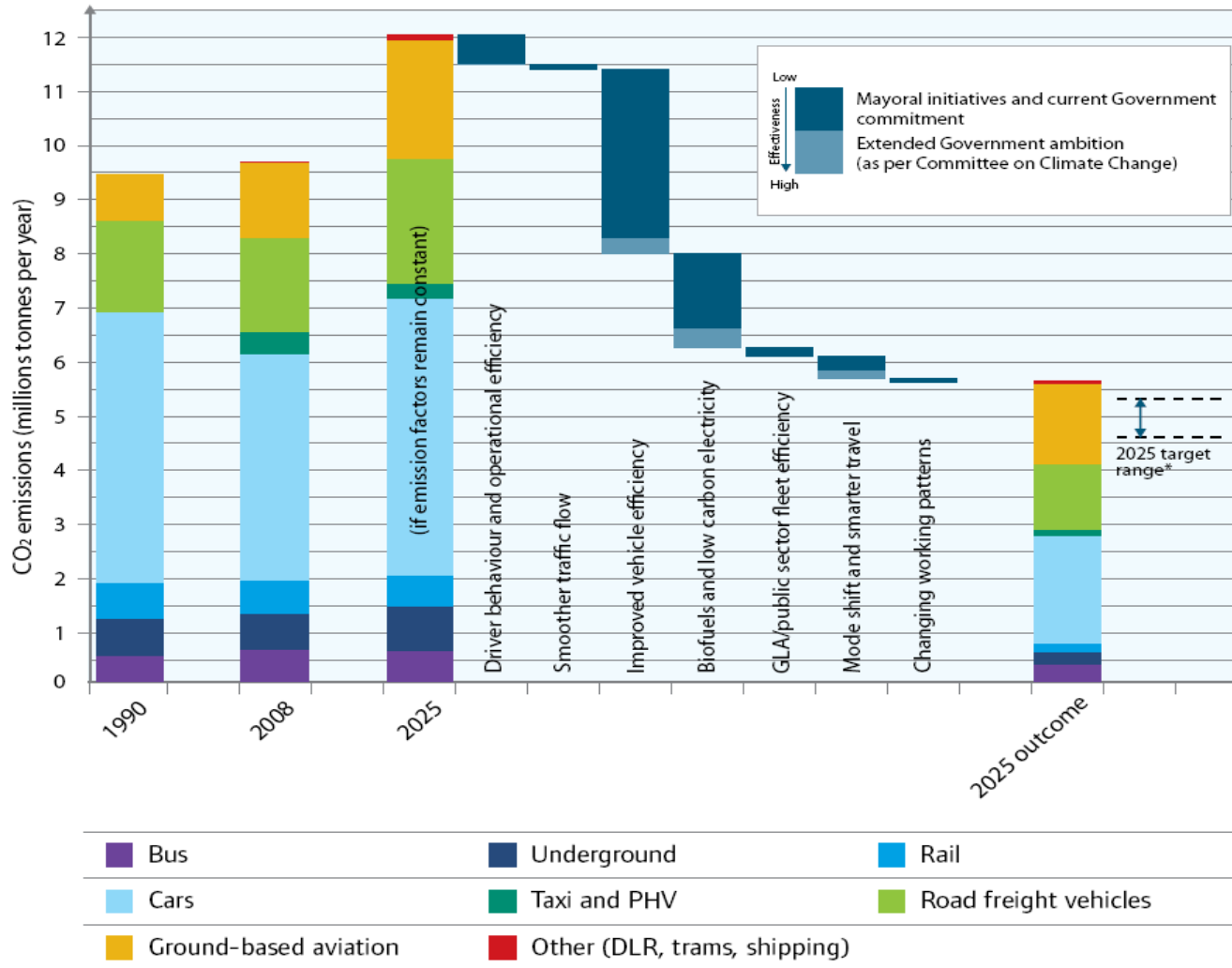
NOx reduced by between 7% and 9 %



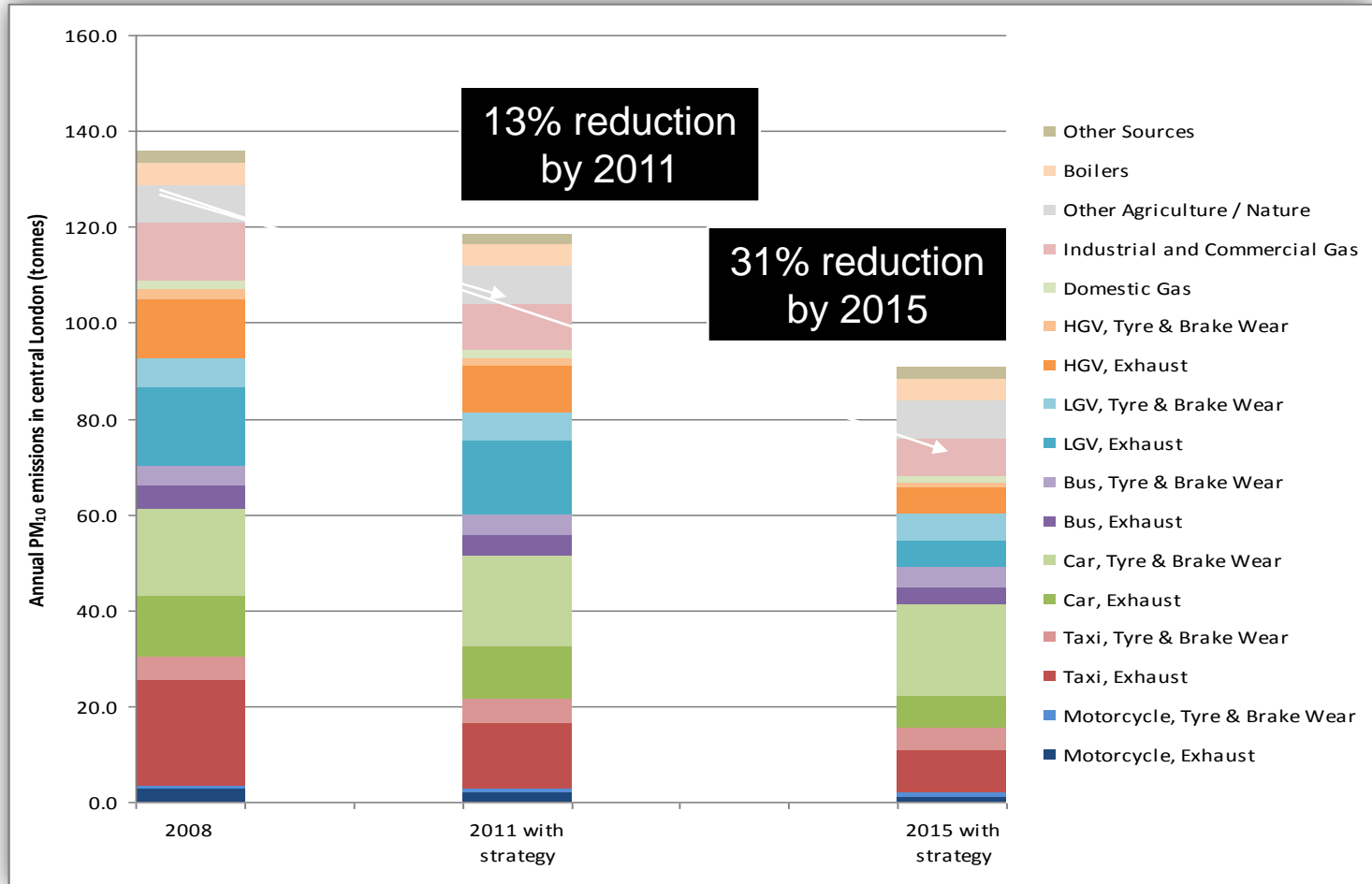
Promoting Carbon Efficient Mode Choice



Climate Change Outcomes



Air Quality Outcomes





..... In conclusion

