Policies to improve air quality in London

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Achieving Sustainable Air Quality for London,

King’s College London

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Air pollution is the environmental factor with the greatest impact on health in Europe and is responsible for the largest burden of environment-related disease

European Environment Agency, 2005
London – one of the world’s mega-cities

1 in 7 people in the UK live in London

28 million journeys are made each day

1.1 million people enter central London each day (80% by public transport)

London is served by several major airports including the world busiest airport Heathrow
Legislation can help – 1956 Clean Air Act
Traffic growth 1980 -2003

Cars and other modes

Great Britain

Modes other than car

Great Britain

- Cars and taxis
- Other

- Motorcycle
- Light vans
- Buses and coaches
- Heavy goods vehicles
- Pedal cycles
Estimated contributions of road transport to NOx emissions in London. Source: GLA, 2006

Estimated contributions of road transport to PM$_{10}$ emissions in London. Source: GLA, 2006
Health impact of poor Air Quality in London

Air pollution in London has caused the UK to breach European health based standards.

1,000 premature deaths are thought to occur annually in London from particulate ($\text{PM}_{10}$) pollution.

Poor air quality reduces our life-expectancy by 8 months (European average – London probably worse).

Air pollution worsens respiratory and cardiovascular conditions, including asthma.
Air Quality Strategy for London

Congestion Charging Scheme
Bus Improvement Programme
Taxi Emission Strategy
Better integrated transport
Best Practice Guidance (BPG)
Low Emission Zone
London’s Congestion Charging Scheme
Changes in traffic levels due to CCS

In/outbound:

- 60,000 fewer car movements per day
- Cars -30%, LGV & HGV -10%
- Taxis +20%, Buses +15%, Motorcycles +20%

Within zone: overall –10% to –15%

Ring Road: overall +5%

Outside zone: variable –7% to +3%
## Commuters entering central London in morning peak

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<th>Year</th>
<th>All modes</th>
<th>Rail only</th>
<th>Rail with transfer to LUL/DLR</th>
<th>All rail</th>
<th>LUL or DLR only</th>
<th>Bus</th>
<th>Coach/ minibus</th>
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Source: CAPC, TfL
1. Data for taxis was not recorded before 1996.
Emission-Influenced Congestion Charging

Proposals are under development, aimed at encouraging lower emission cars

Incentives for lower emission cars could be introduced from 2008

Higher charges for high polluters could be introduced from 2008/9.
Bus Improvement Programme

Approx 8000 buses on 700 different bus routes

To date - has resulted in 90% reduction in $PM_{10}$

Hydrogen Programme
Taxi Emission Strategy

All 20,000 London taxis to meet Euro III for NOx and PM by mid-2008
London Low Emission Zone

Aim: “to encourage operators to clean up their vehicle fleets by… replacing or modifying older diesel-engine vehicles that do not meet the proposed… emissions standards”

Staged implementation, with progressive tightening of controls

- **2008**
  - targeting of the most polluting diesel-engine HGVs, buses and coaches

- **2010**
  - broadened to include heavier vans and minibuses.

**Health impacts of air pollution an important rationale**
Health benefit of achieving sustainable air quality in London

- Improved quality of life
- Improved longevity
- Fewer GP consultations
- Decreased need for medication
- Fewer hospital admissions
Summary - London’s air quality strategy

**Congestion charging** has reduced traffic by about 10%.

**Bus Improvement Programme** has resulted in 90% reduction in PM$_{10}$ and further improvements are being made.

**Taxi Emission Strategy** will ensure all 20,000 black cabs meet stringent emission limits by mid 2008.

**Better integrated transport** policies have led to a 5% shift from car use to public transport.

**Best Practice Guidance (BPG)** to prevent measurable increase in dust concentrations past site boundary and reduce exhaust emissions of PM$_{10}$ at high risk sites by 85% minimum.

**Low Emission Zone** should reduce area of London that exceeds the air quality objectives.
New challenges/issues

Quick technological fixes/untested innovations – increased direct NO2 emissions?

Primary particles – why are the concentrations not falling?

Increased (proportional) contribution of non exhaust emissions to ambient PM – toxicological consequences?

Air quality versus climate change initiatives - increased local emissions from biomass use
Thank you for your attention – questions?