

Low Carbon Transport Options for London

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April 2007



■ Outline of presentation

- The presentation will address the following questions:
 - What are the challenges facing London's transport system to 2025?
 - What targets are we working to achieve?
 - How can TfL deliver these targets?

■ About London

- World city & gateway to UK
- 7.4 million residents
- 4.5 million people in employment
- 30 million visitors per year
- More than 330,000 businesses
- Average of 27 million journeys per day



■ Overview of Transport for London

Transport for London



Corporate

- Equality & Inclusion
- Group Services
- General Counsel
- Group Finance
- Group Planning
- Group Communications

London Underground

- Contract Management of PPP
- Engineering
- Safety
- Stations
- Trains

London Rail

- Docklands Light Railway
- London Rail Development

Surface

- Buses
- Public Carriage Office
- London River Services
- Dial-a-Ride
- London Streets
- Congestion Charging
- Transport Policing Enforcement Directorate
- Freight
- Trams



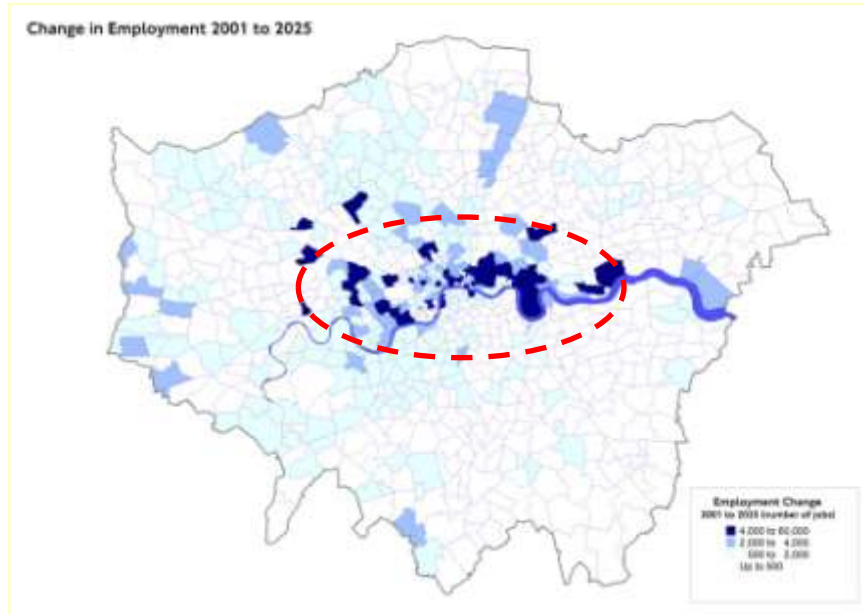
Transport for London

■ T2025 – London's future challenge

- Preparing for...
 - Supporting the UK economy by supporting the finance and business sector
 - Getting people to work on reliable radial links with acceptable levels of crowding
 - Accommodating dispersed growth in trips in outer London
 - Ensuring as many trips as possible are by public transport, walking and cycling
 - Manage the road network, reducing congestion and carbon dioxide (CO₂) emissions

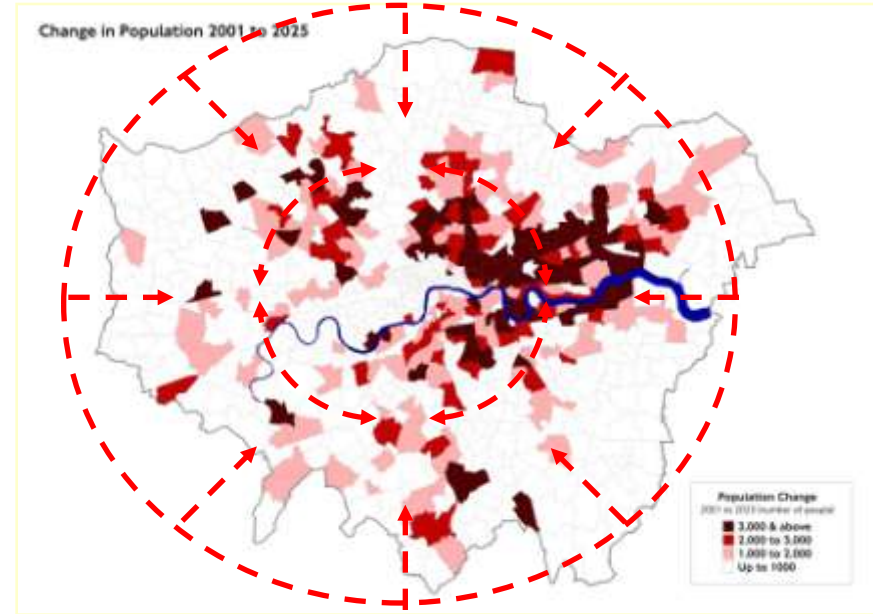


Spatial distribution of population & employment growth over the next 20 years



+900,000 jobs

Concentrated job growth east-west



+800,000 people

Implies radial commuting and rise in more dispersed trip patterns

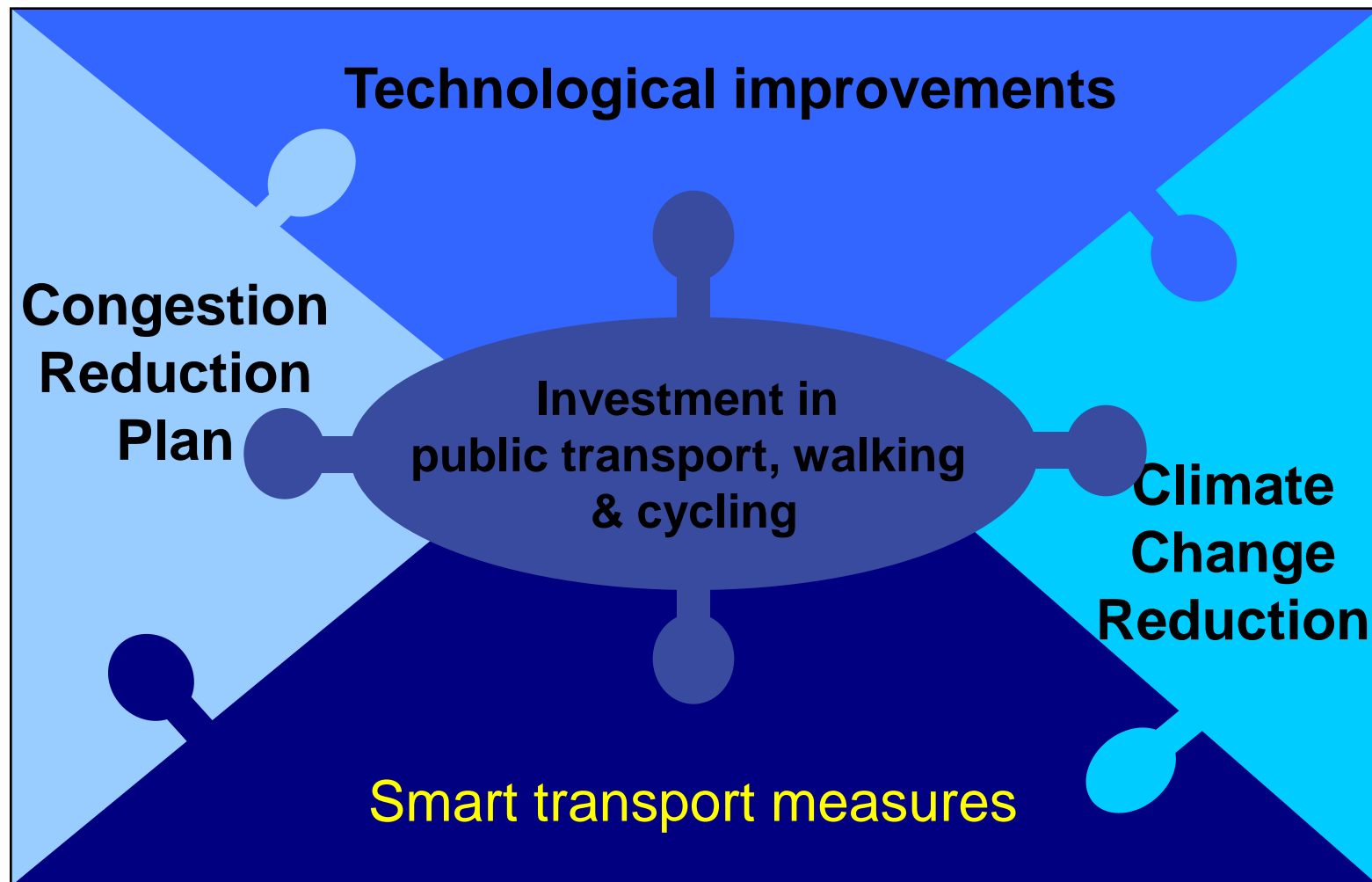
+ 4 million extra journeys per day

■ Climate change adaptation

- More seasonal rainfall
 - Warmer, wetter winters
 - Hotter, drier summers
- Flooding – tidal, fluvial, surface, sewer
- Water Resources
- Higher Temperatures
- Subsidence/heave
- Storms
- Global climate events



■ T2025 Response to climate change



■ London's response to climate change

LONDON
CO₂

First **London Climate Change Partnership** (2001)

Mayor's Energy Strategy (2004) non-statutory proactive approach to reducing CO2 emissions

T2025 (Nov 2006) developed package to meet 30% reduction in CO2 emissions by 2025

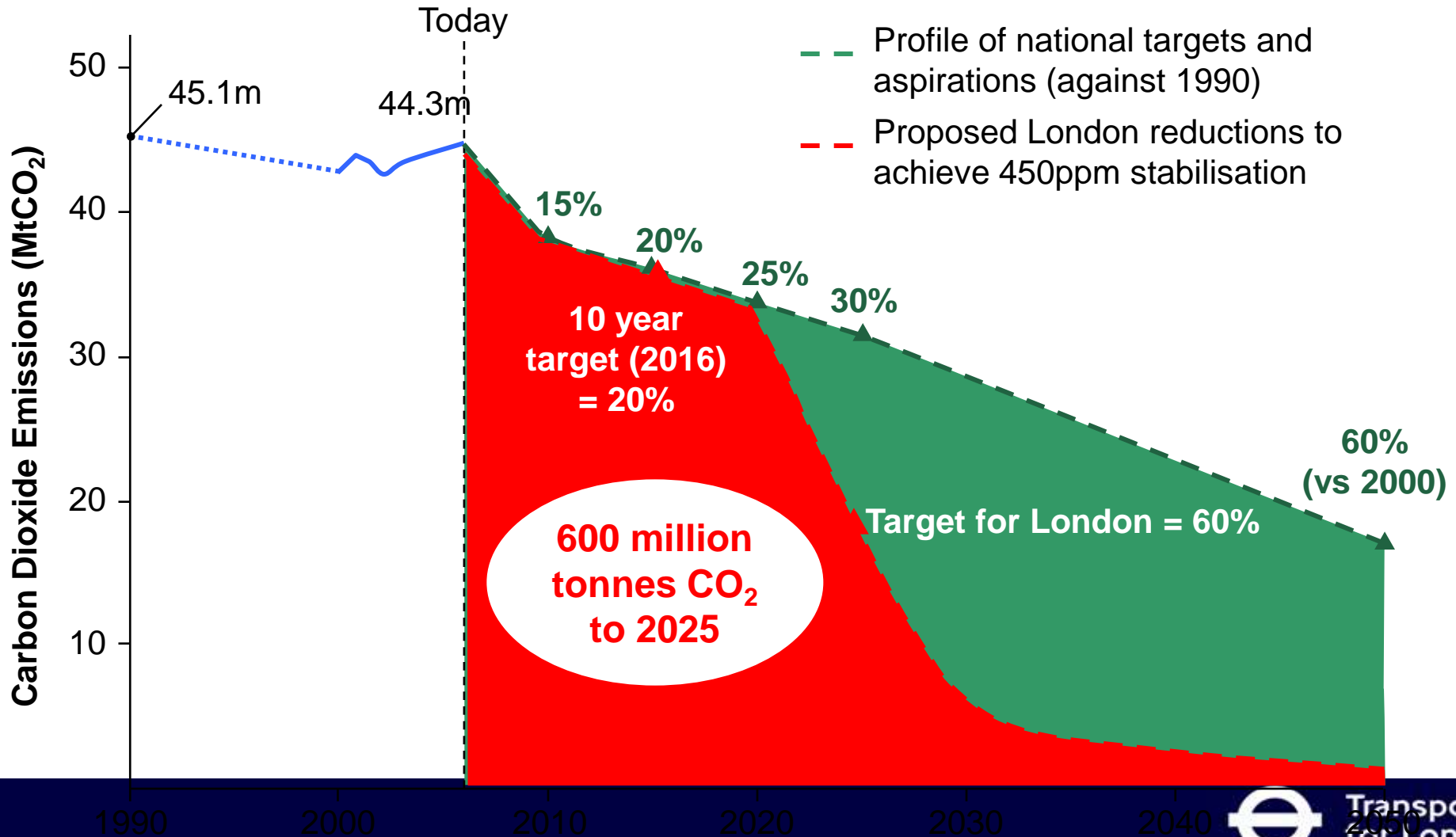
Climate Change Action Plan (Feb 2007)– Green programmes for Homes, Organisations, Energy and Transport

Mayor's target of 60% reduction in CO2 emissions by 2025 from 1990 levels – more challenging than UK & T2025 targets - to be included in the new Mayor's Transport Strategy

2 new **Mayoral statutory Strategies**

- Energy and Climate Change Mitigation (due 2008)
- Climate Change Adaptation (due 2007)

London's CO₂ target



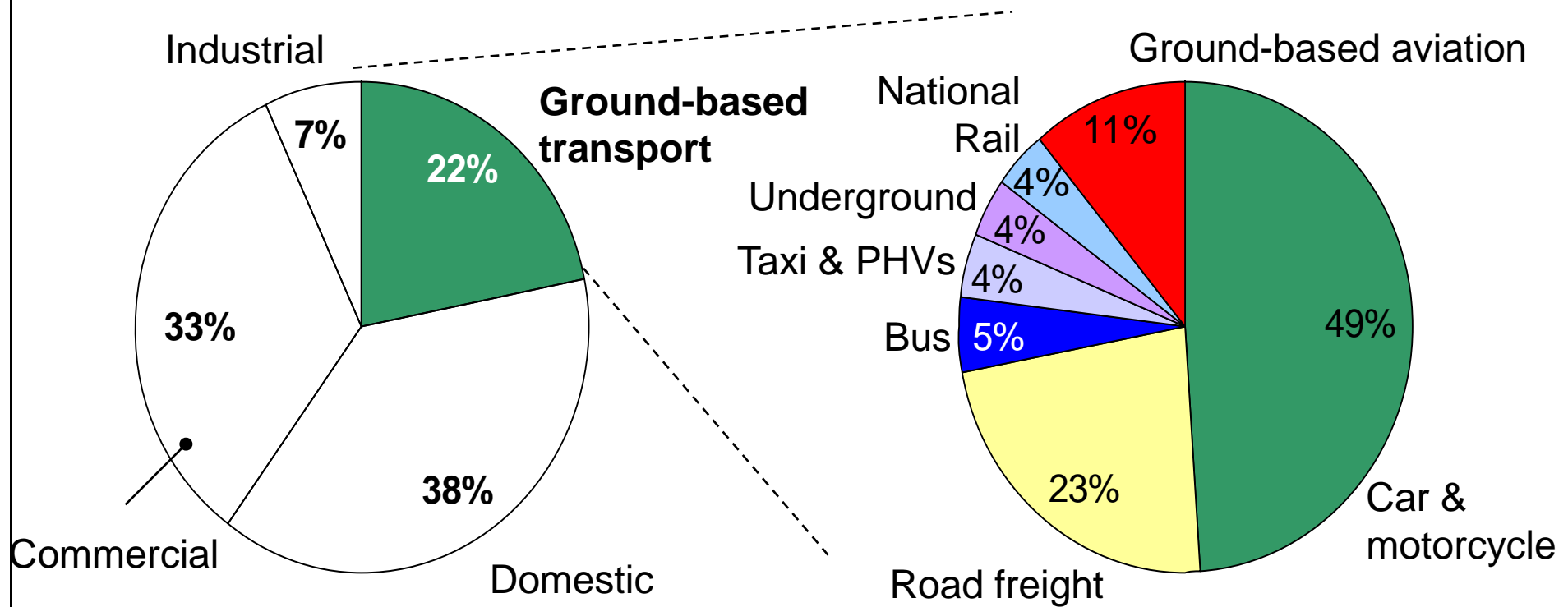
CO2 emissions from London's transport sector

All sectors

44 million tonnes CO₂

Transport sector

100% = 10 million tonnes CO₂



■ Current initiatives

- **Climate Change Action Fund**
- **Technology changes** e.g. solar powered bus shelters & regenerative braking system for LU
- **Congestion Charging** reduced congestion by 22% & CO2 emissions by 16% within the zone (between 2002 & 2003)
 - Western Extension opened February 2007
 - Planned CO2 emissions based charging
- **Parking Permit** charges based on CO2 emissions planned in local areas
- **London Construction Consolidation Centre**



■ Mayor's Climate Change Action Plan

Change the way people travel

Improve energy efficiencies

Introduce low carbon/alternative fuels

■ Whole life costs for different bus/fuel options

Bus / Fuel	Total costs (pence per km) ^[1]	Well to wheels GHG emissions (g CO ₂ eqv / km)	Cost effectiveness of abatement (£ / tonne of carbon)
10 metre, single deck buses			
Baseline: Standard diesel Euro III (with DPF)	60.7	1266	-
Diesel-electric hybrid, (without DPF)	66.0 (9%)	836 (-34%)	452
Standard diesel, Euro IV	60.9 (0.4%)	1153 (-9%)	83
12 metre, single deck buses			
Baseline: Standard Euro III diesel (with DPF)	72.3	1700	-
Bioethanol (Etamax D) bus	98.2 (36%)	216* (-92%) 912** (-50%)	639* 1218**
Biomethane bus	96.9 (34%)	334 (-80%)	660

■ Using alternative fuels

Buses

Diesel-electric hybrid fleet

Following first trial of 3 Hydrogen Buses – new purchase of 10

Ethanol Trial



Support Fleet

Mayoral target +60 low carbon vehicles

20 hydrogen cars/vans plus supporting infrastructure

Fleet strategy



■ Buying lower-carbon vehicles does not have to mean higher cost or new technology



- VW Golf 1.9 litre diesel engine
- Cost: £16,500
- 132 grams CO₂ /km



- VW Golf 3.2 litre petrol engine
- Cost: £25,000
- 255 grams CO₂ /km

■ Conclusions

- We've outlined the challenges facing London
- We're working to achieve Mayor's targets
- Plans in place to 2025 and beyond

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