



Ultra Low Emission Zone (ULEZ)

Michele Dix

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Mayor's Vision for a ULEZ

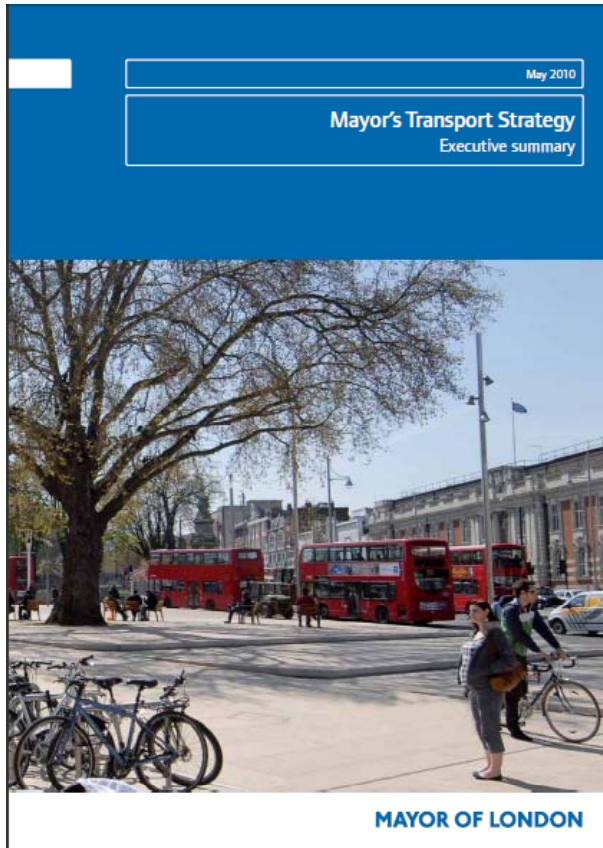
To create an ultra low emission zone where almost all the vehicles running during working hours are either zero or low emission.

This could deliver incredible benefits in air quality and stimulate the delivery and mass use of low emission technology.

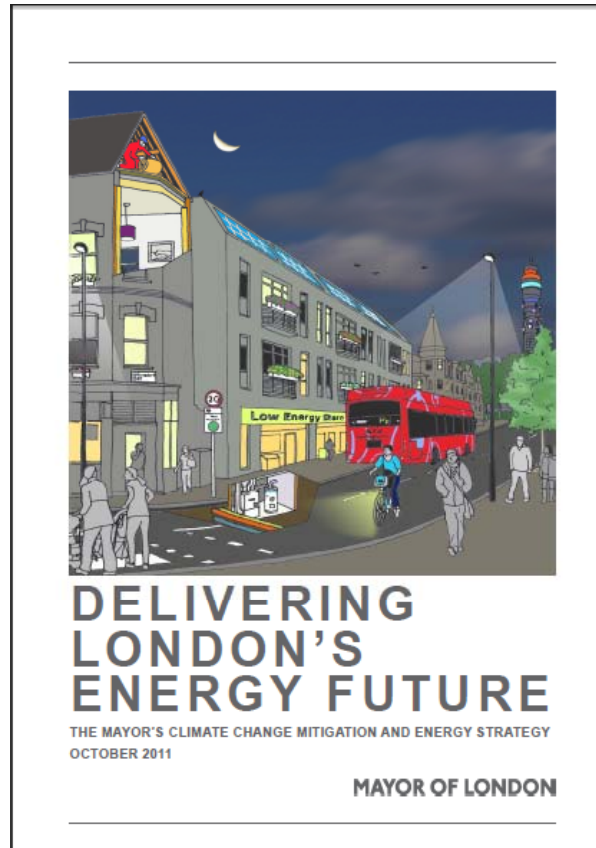
Boris Johnson, Mayor of London



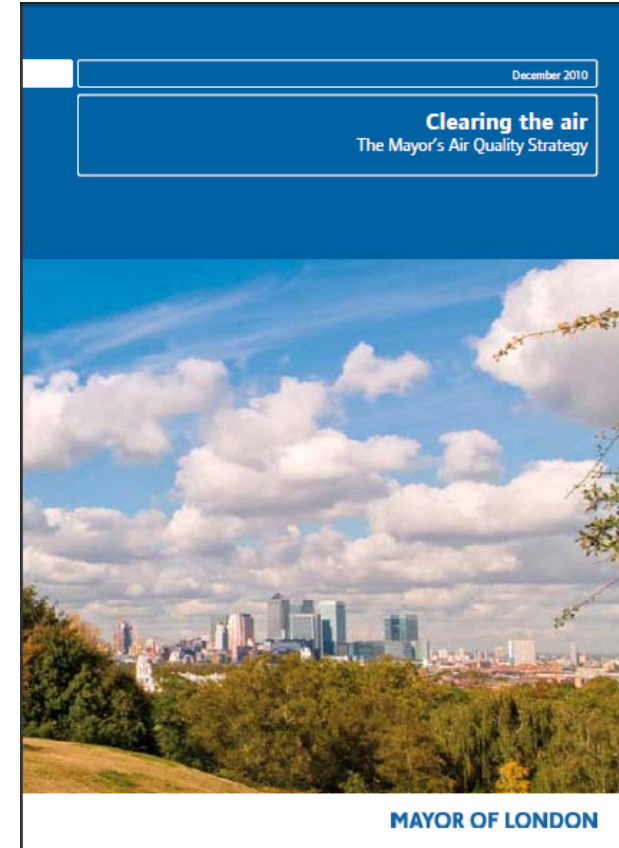
Meeting London's Challenges



Mayor's Transport Strategy



Mayor's Climate Change Mitigation
and Energy Strategy



Mayor's Air Quality Strategy



Work to date and planned interventions

Implemented

- CC Z Ultra Low Emission Discount
 - Incentivising very low emission vehicles
 - Standards recently tightened to maximise effect
- LEZ
 - Focussed on particulate matter (PMs)
 - Only applies to heavy diesel vehicles
 - Standards tighten in 2012
 - Next phase for NO_x in 2015 only applies to TfL Buses
- Taxi 15 year age limit
- Private Hire Vehicle 10 year age limit
 - Both introduced in 2012

But there remains a gap between where we can get to by 2020 and the EU limit values for NO₂



London's challenges in 2020 - Air Quality Hotspots

Road vehicles not the only source of emissions:

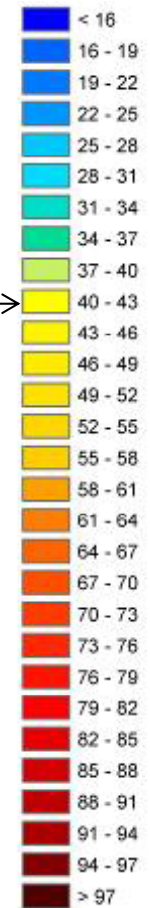
- Airports
- Construction sites
- Industrial Areas

BUT transport is largest source of NO_x

Greatest amount of public exposure to air pollutants and highest amount of roadside activity occurs in central London

Wider action plan still required to address exceedance elsewhere

2020 NO_2
Annual Mean
($\mu\text{g}\text{m}^{-3}$)



EU limit →



Associated policies

- Any central London policy should be consistent with others in development:
 - Roads Task Force
 - Cycling Vision, including cycle safety
 - Walking
 - West End
 - Mayor's 2020 Vision
 - Freight
 - Taxis
 - Tourist Bus Action Plan
- Wider Air Quality issues will continue to be addressed through:
 - The Mayor's Air Quality Strategy
 - Transport Emissions Action Plan; and
 - The Mayor's Low Emission Vehicle Road Map
- Other policy developers
 - Government
 - EU
 - Boroughs



Objectives and purpose



Reduce air pollutants from road transport

Reduce CO2 emissions from road transport

ULEZ objectives

Promote sustainable travel

Stimulate low emission vehicle market



Objectives and purpose

Reduce air
pollutants
from road
transport

Addressing the NO₂ problem

- Diesellisation of fleet
- Road transport roughly half the source of NO_x
- Unlikely to achieve compliance with EU NO₂ limit value by 2020

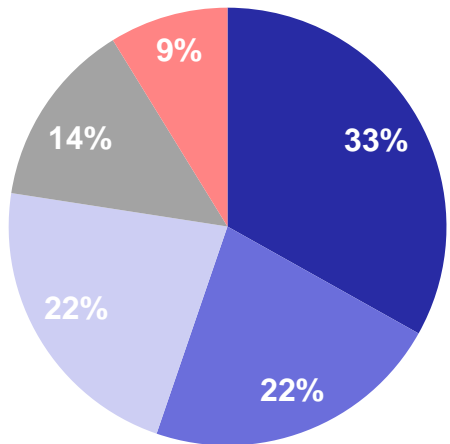
Improving health impacts

- 4,000 Londoners die prematurely linked to air pollution (source DoH)
- Reported levels of PM10 within the EU limit with some roadsides at risk of exceedance
- Air pollution linked to risk of cancer and affects asthma sufferers.

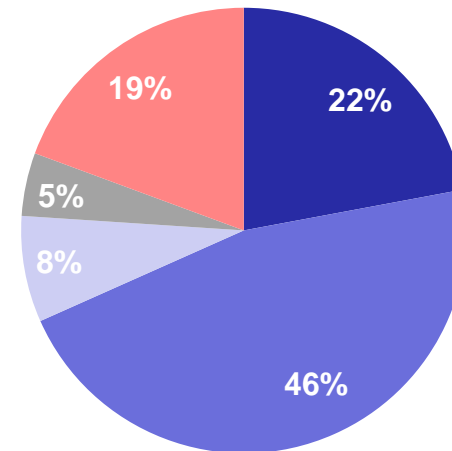


Central London emissions profile 2020

Whole London



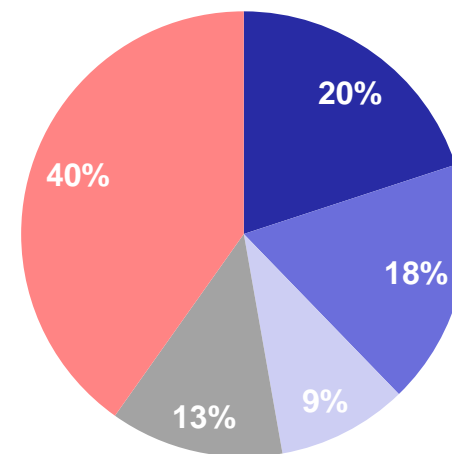
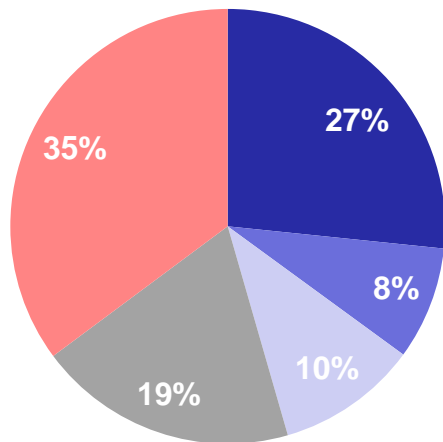
Central London



PM₁₀

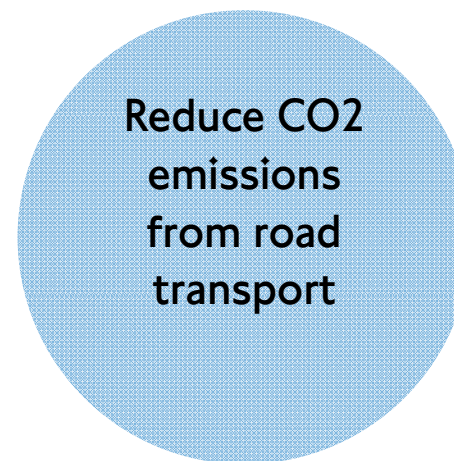
NO_x

- Car & motorcycle
- Taxi
- Van
- HGV
- Bus and coach



Objectives and purpose

- Road transport responsible for 21% CO₂ emissions in central London
- Diesel vehicles tend to have a lower CO₂ emissions than petrol but much higher NO_x emissions



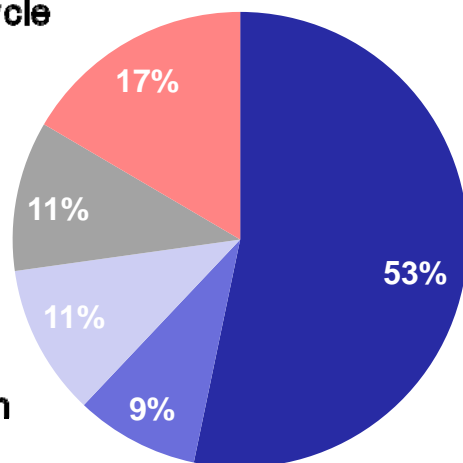
■ Car & motorcycle

■ Taxi

■ Van

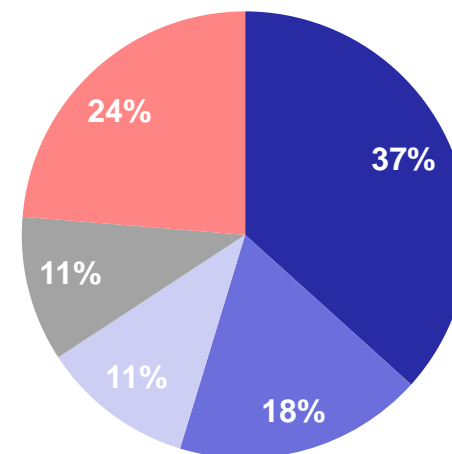
■ HGV

■ Bus and coach



Whole London

CO₂



Central London



Objectives and purpose

- Supporting Mayor's ambition for electric, plug-in hybrid and alternative fuel vehicles to be common place on London's streets
- Influence and gain from Government's investment to stimulate the low emission vehicle market



Stimulate low
emission
vehicle
market

Objectives and purpose

THE MAYOR'S VISION FOR CYCLING IN LONDON

An Olympic Legacy for all Londoners



MAYOR OF LONDON

Transport for London

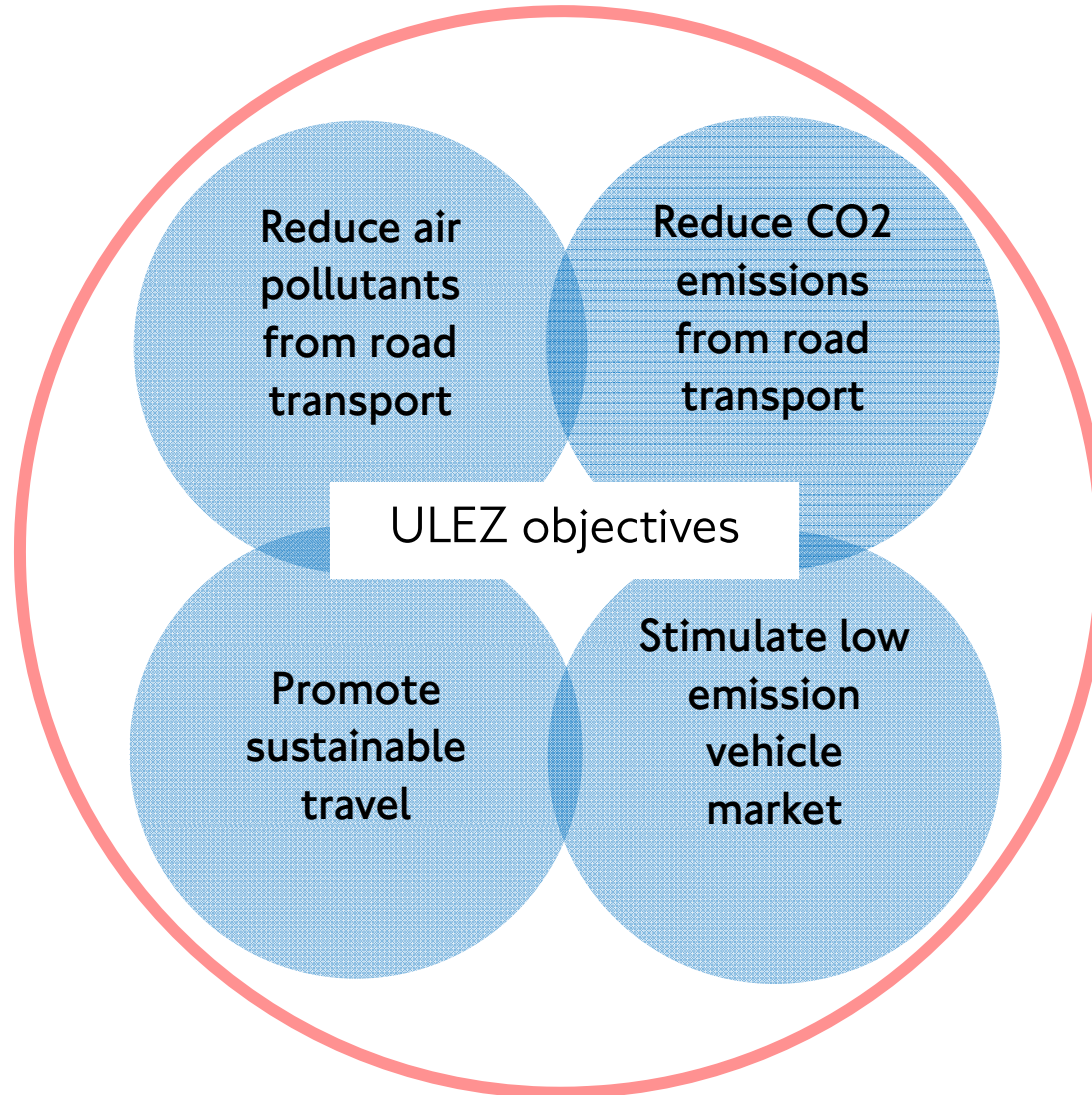


Promote
sustainable
travel

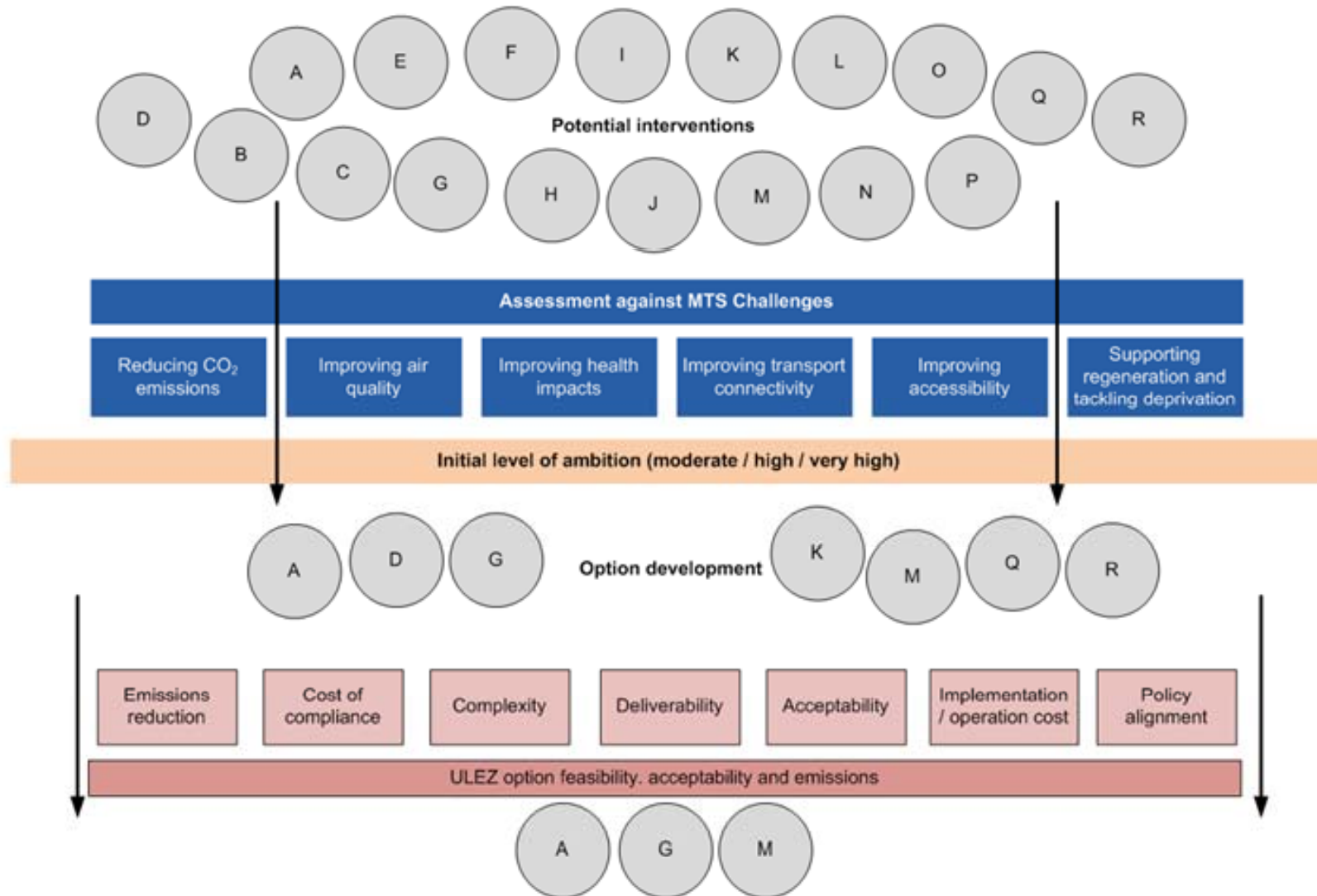
- Supporting the Mayor's cycling vision
- Encouraging those who can make journeys by public transport to shift
- Working with the freight industry to change delivery patterns as well as reduce emissions from HGVs and LGVs
- Encourage zero emission deliveries



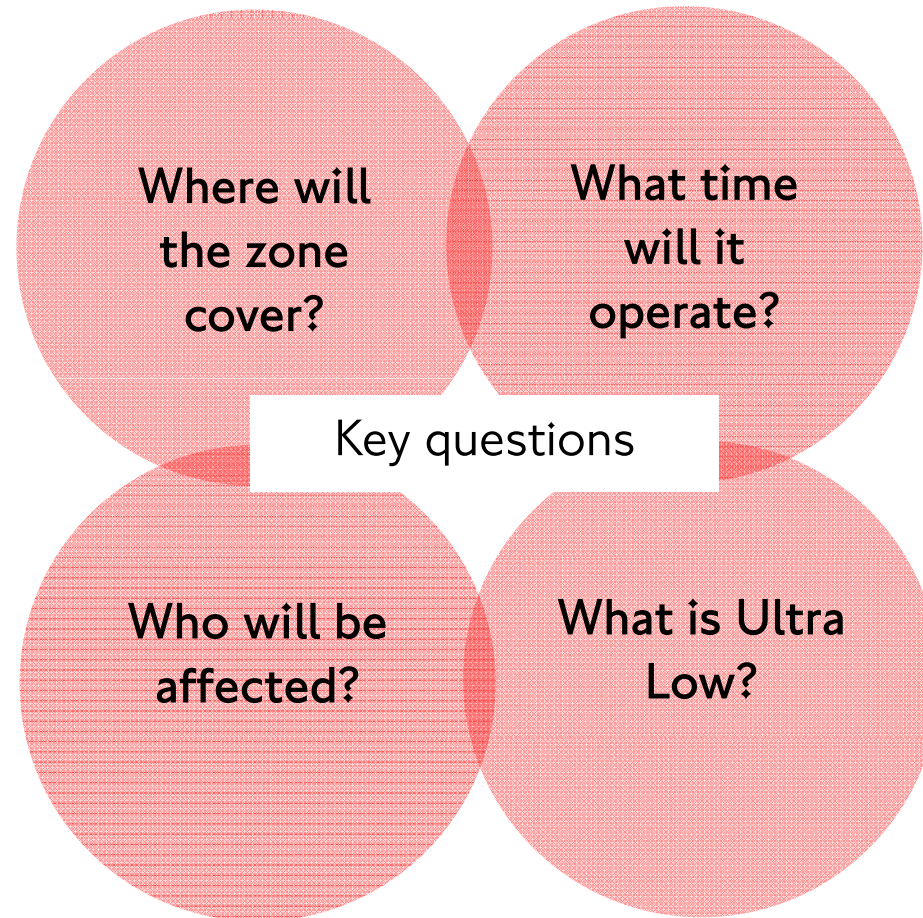
Identifying potential policies



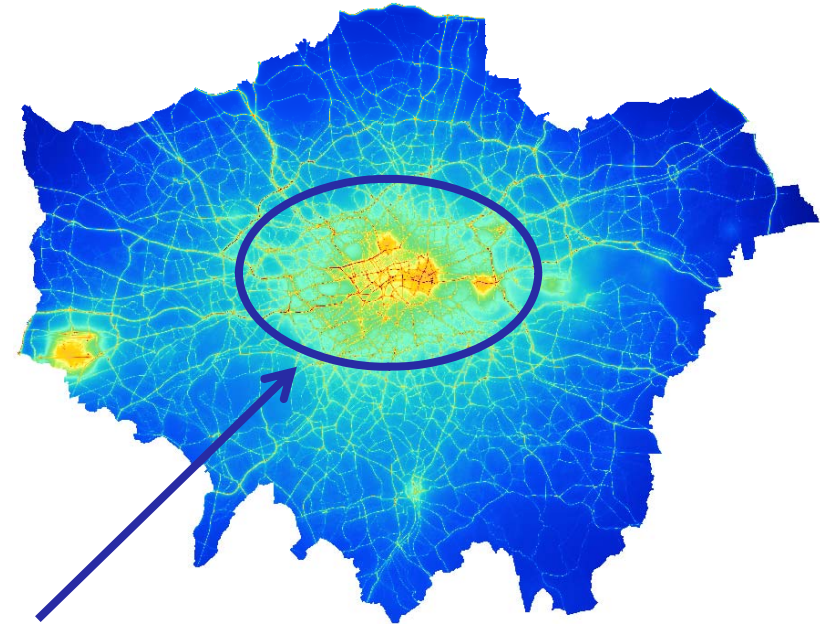
Identifying potential policies



Refining possible policies



Refining possible policies



Identifying exceedance and human exposure

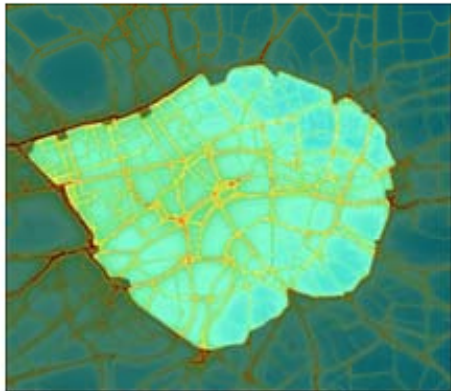
- Central London predicted to remain an air quality focus area beyond 2020
- Greatest amount of public exposure and highest amount of roadside activity occurs in Central London
- Congestion Charge Zone well established with embedded travel behaviour

Refining possible policies

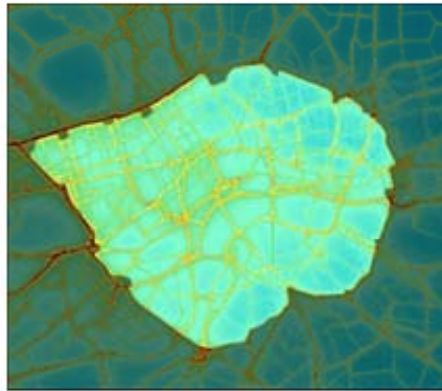
24hrs 7 days a week?
Or
Congestion Charge hours?
7:00 – 18:00 Mon-Fri (exc public
holidays)

What time
will it
operate?

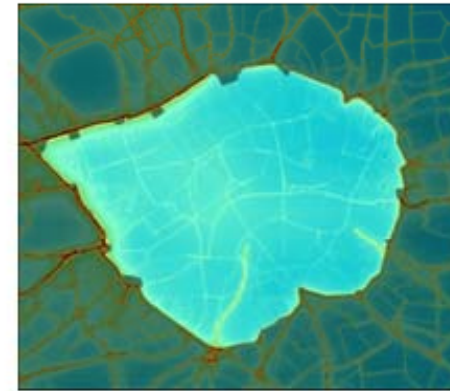
Zero Emission, Charging Hours*



Euro 6, 24 Hours, 7days*



Zero Emission, 24 Hours, 7days*



*taken from sensitivity scenarios, assumes like-for-like travel behaviour and 100% compliance

Refining possible policies

Euro 6/VI

- Next set of standards to be introduced from 2014 starting with heavy vehicles
- Significant improvement on previous standards
 - 70% reduction in emissions for diesel cars compared to Euro 5
 - 80% reduction for HGVs compared to Euro V
- Petrol Euro 4 standard is same as Diesel Euro 6

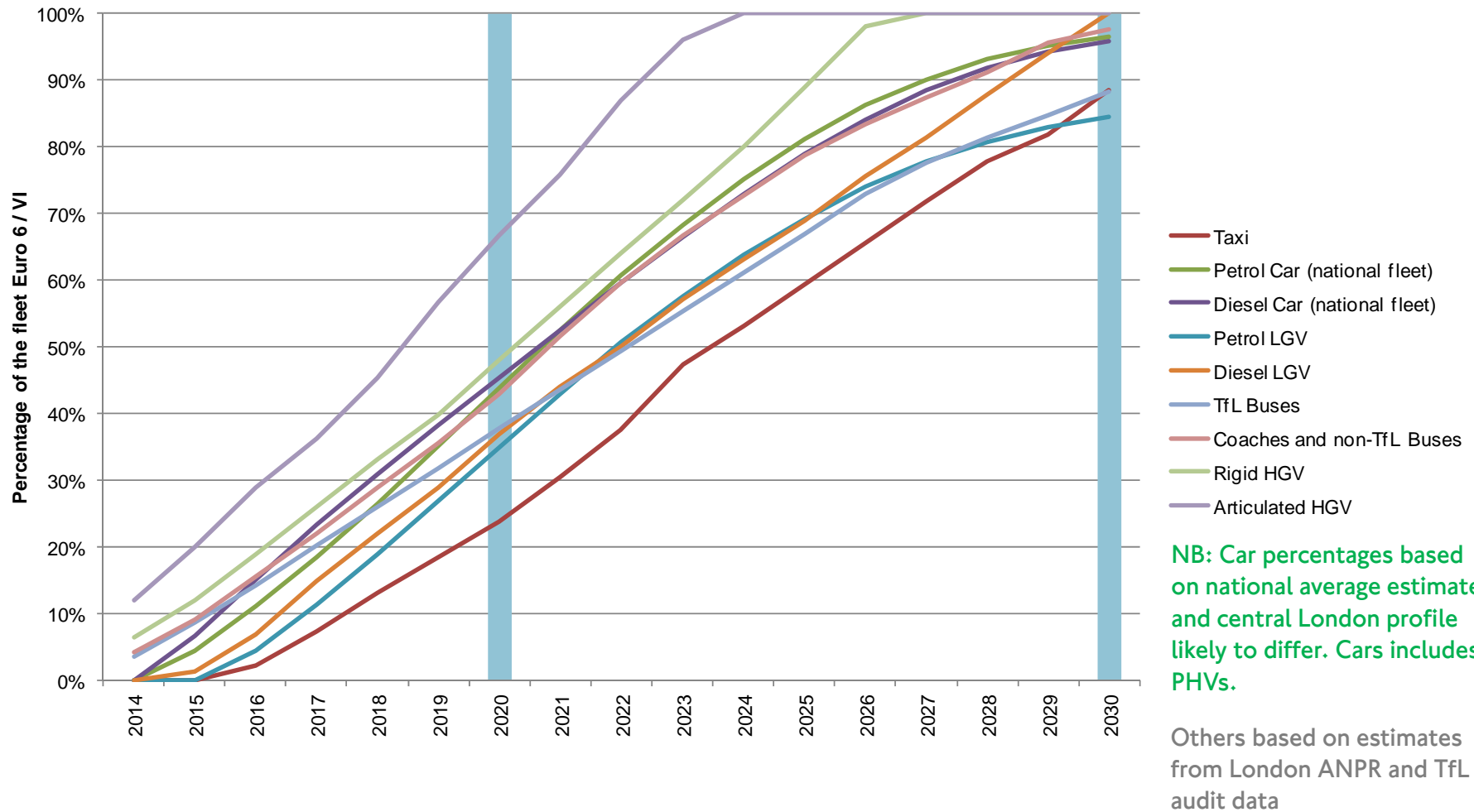
Euro standards

- Set of emissions based criteria for new vehicles
- Aim to reduce PMs, NO_x and CO₂
- Currently new vehicles meet Euro 5 standard (other than motorbikes)
- UK Government focussing on low carbon vehicles especially alternative fuels

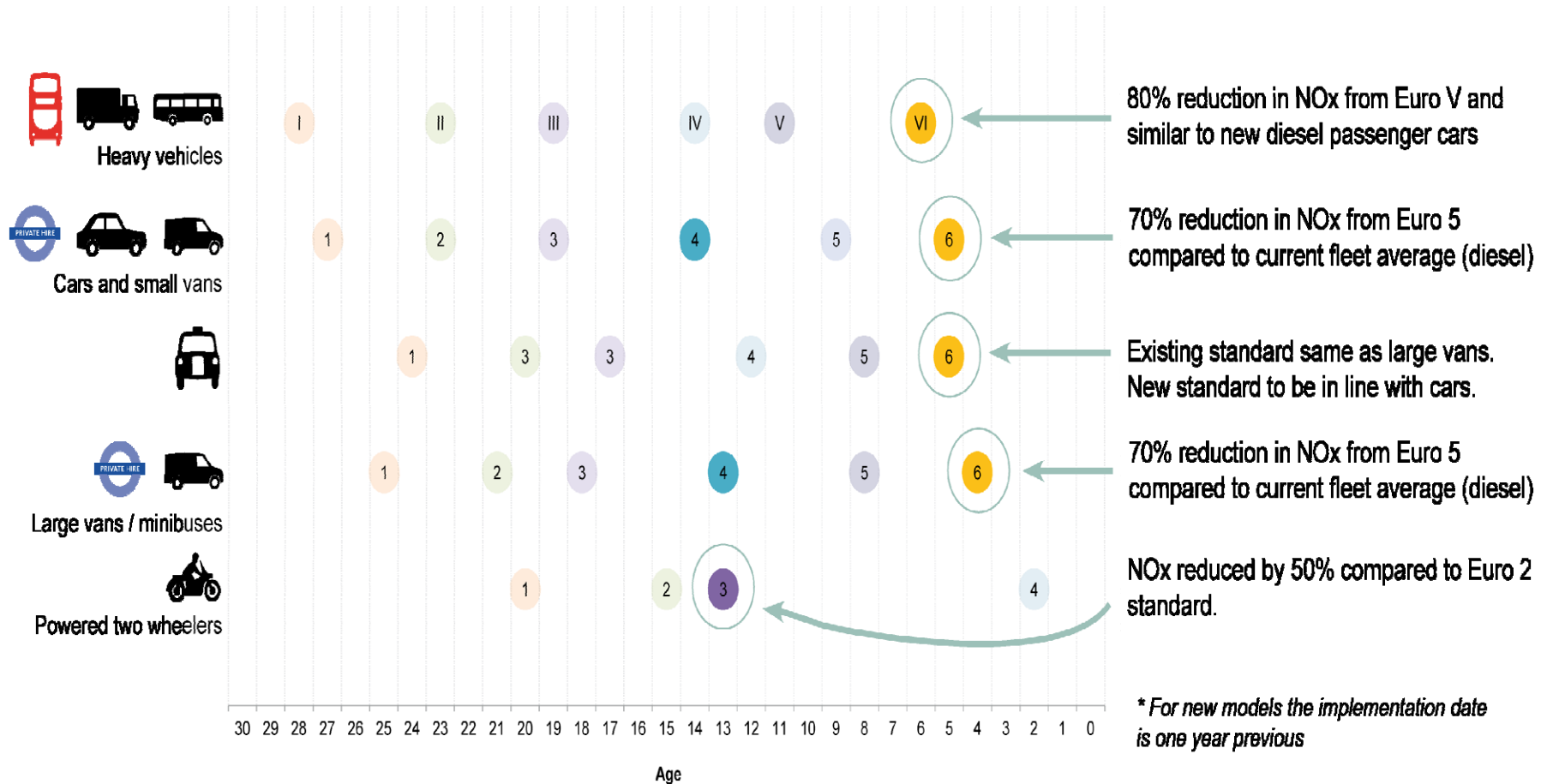
What is Ultra
Low?



Projected uptake of Euro VI vehicles – without intervention



How old are Euro 6 vehicles in 2020?



We need to take the age of vehicles into account when considering which policy should apply for each vehicle type



What realistically can be achieved?

- TfL only one part of the solution
- How do we get greener vehicles?
- What technology will be available in 2020?
 - Electric?
 - Gas?
 - Hybrid?
- How much will they cost?
- Need to consider...
 - Government
 - Industry
 - Infrastructure



Refining possible policies

- All types of vehicles being assessed at policy development stage
- Impact on emissions, compliance costs and wider economic impacts are being assessed
- Potential exemptions, mitigations and incentives also being considered

Who will be affected?

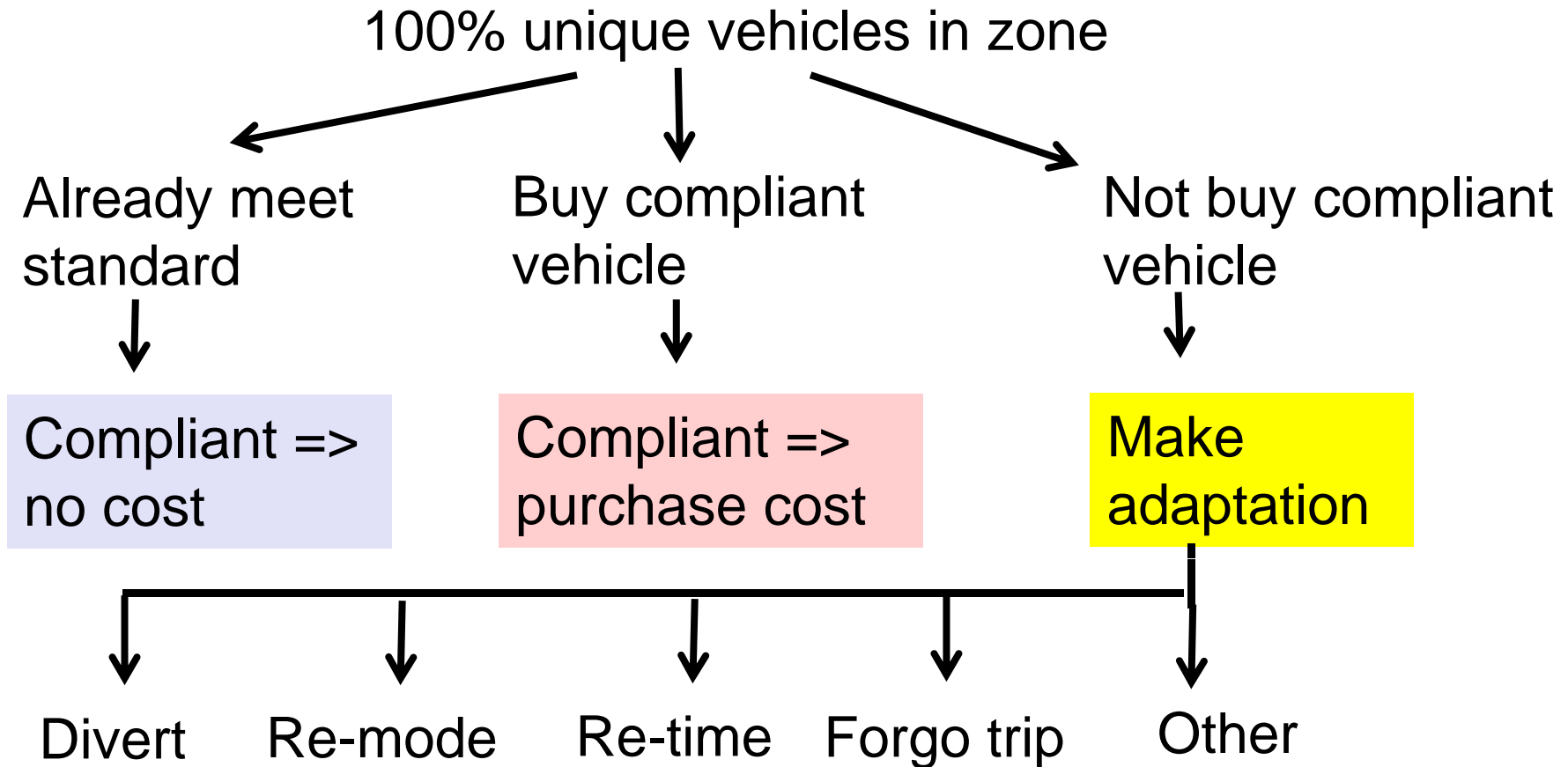
Total number of unique vehicles in the CCZ 24/7 period

	Number of unique vehicles entering at least once a month
Cars/PHV/P2W	800,000
Vans	167,000
HGVs	31,000
Non TfL buses & coaches	16,000
Taxis	21,000 *
Buses	2,700

* London wide licences



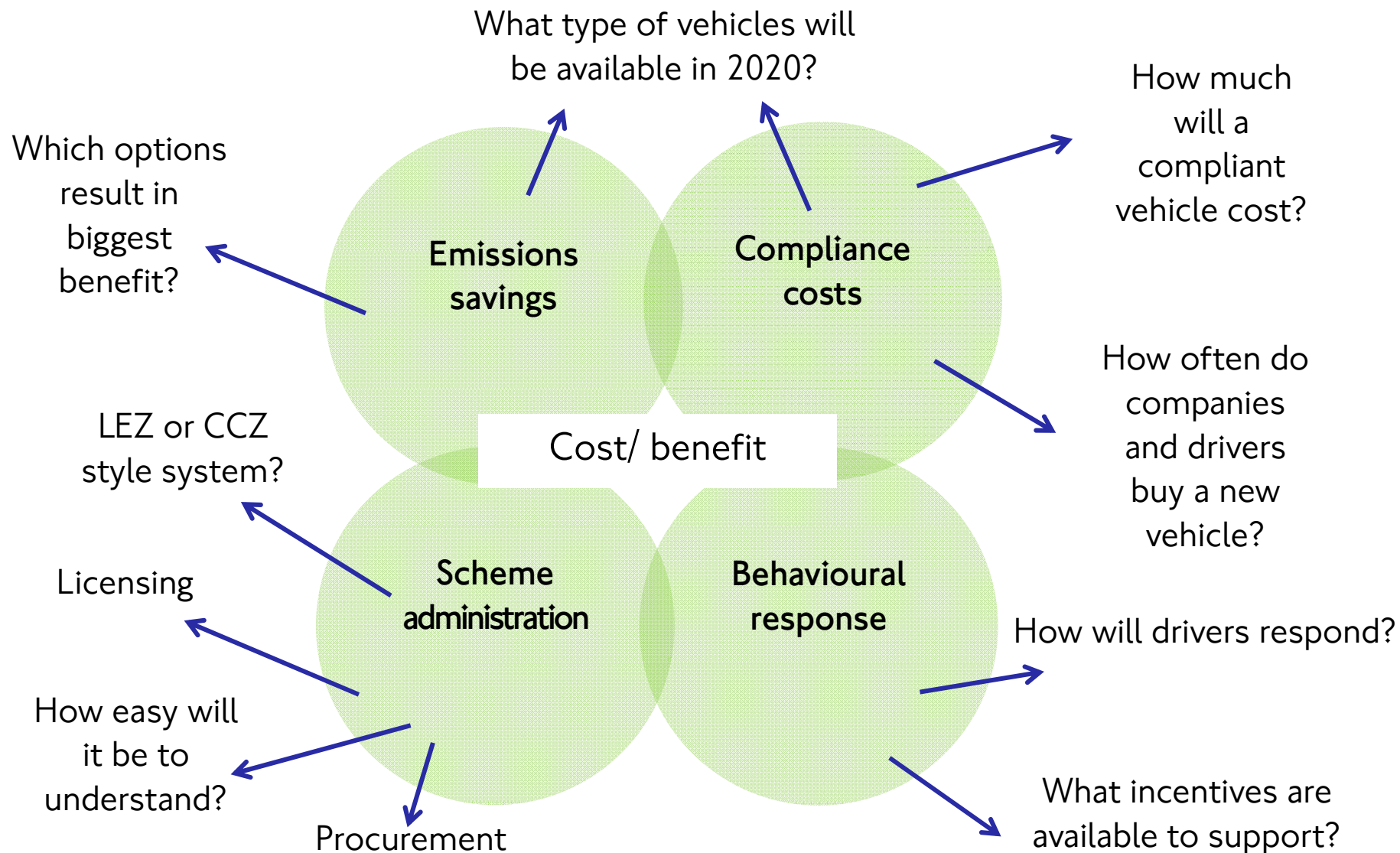
Pathways to compliance in 2020



Adaptations may lead to less traffic in zone but also less benefits outside zone.
Adaptations may also incur dis-benefits (eg inconvenience)



Assessing the options – current stage of development



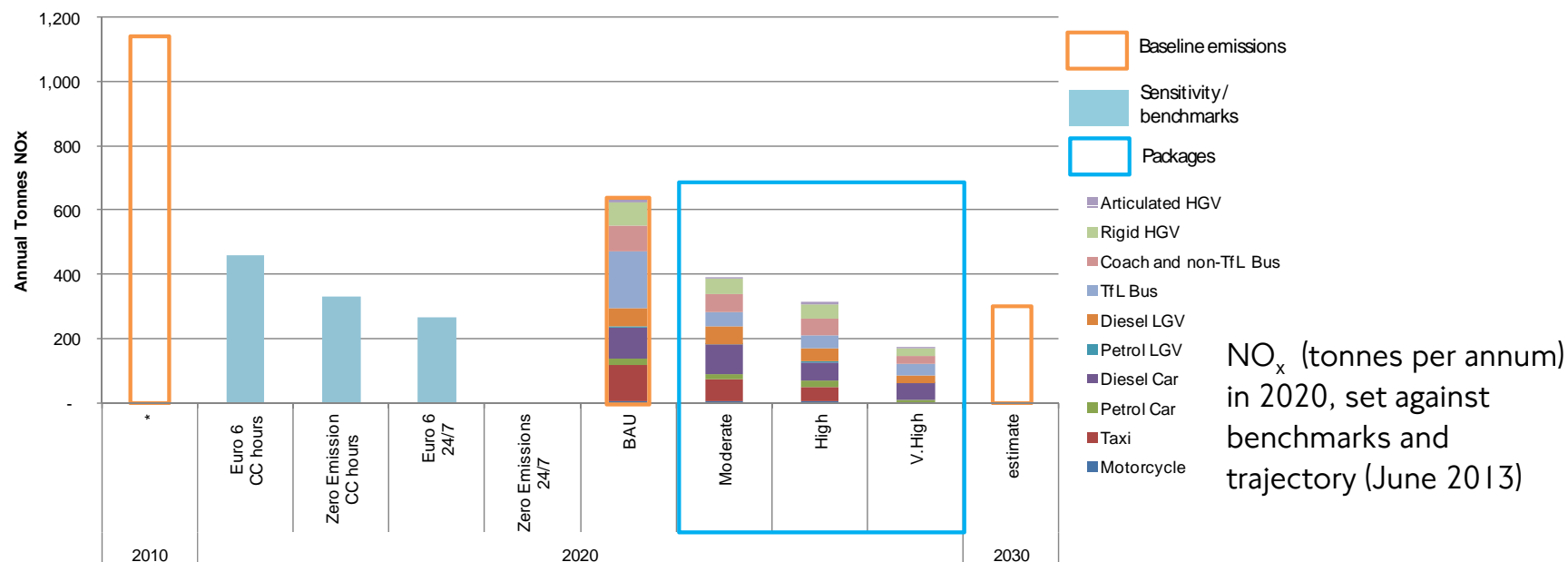
Refining the Options – Process and Rationale

- Policy options have been sifted again to get more refined options for further analysis.
- Need to balance feasibility, effectiveness and cost of compliance
- Identifying a Moderate, High, Very High policy for each vehicle type. These have then been packaged together to test options
- For each of the packages the following qualitative and quantitative assessment are being considered:
 - Behavioural response
 - Emissions reduction in central London (NO_x / PM / CO₂)
 - Reduction in human exposure
 - Stakeholder acceptability
 - Deliverability (including complexity, incl. technology)
 - Cost of compliance for individuals and businesses
 - Economic impact
 - Traffic Impact
 - Promoting PT, walking & cycling



What we are considering...

- Using the Congestion Charge Zone area
- Mix of different packages identified based on level of ambition for each vehicle type based on:
 - Euro standard or Zero emission?
 - Time of operation of Zone – 24/7 or CCZ hours?
 - Charge level?



*taken from sensitivity scenarios, assumes like-for-like travel behaviour and 100% compliance



Next steps

- **June -Dec 2013** Further ULEZ policy development looking at 3 levels of ambition: moderate, high, very high - feasibility assessment, stakeholder engagement, cost of compliance and acceptability
- **December 2013** ULEZ policy options for further consideration to the Mayor

Subject to Mayoral decision

- **2014** Wider engagement on scheme principles
- **2015** Public consultation on specific ULEZ scheme proposal
- **2020** Scheme implementation



Questions

1. Which vehicles should be included in a ULEZ and how ambitious should we be with the standards we apply for each vehicle type?

HGVs? Vans? Buses? Coaches? Taxis? Cars?
Private Hire Vehicles? Motorcycles/Powered 2 Wheelers?

2. Is timing important, e.g. congestion charging hours only vs 24/7?
3. Have we got the right area?
4. What is a reasonable cost for compliance for each vehicle type?
5. What more can Government, EU and Boroughs do to encourage the use of low emission vehicles?



For more information please contact:

Esme Yuill, Strategic Communications Manager, TfL

esmeyuill@tfl.gov.uk

Link to the ULEZ briefing to the London Assembly Environment Committee in
July: <http://www.london.gov.uk/sites/default/files/ULEZ%20scrutiny%20briefing%20-%20July%202013.pdf>

