

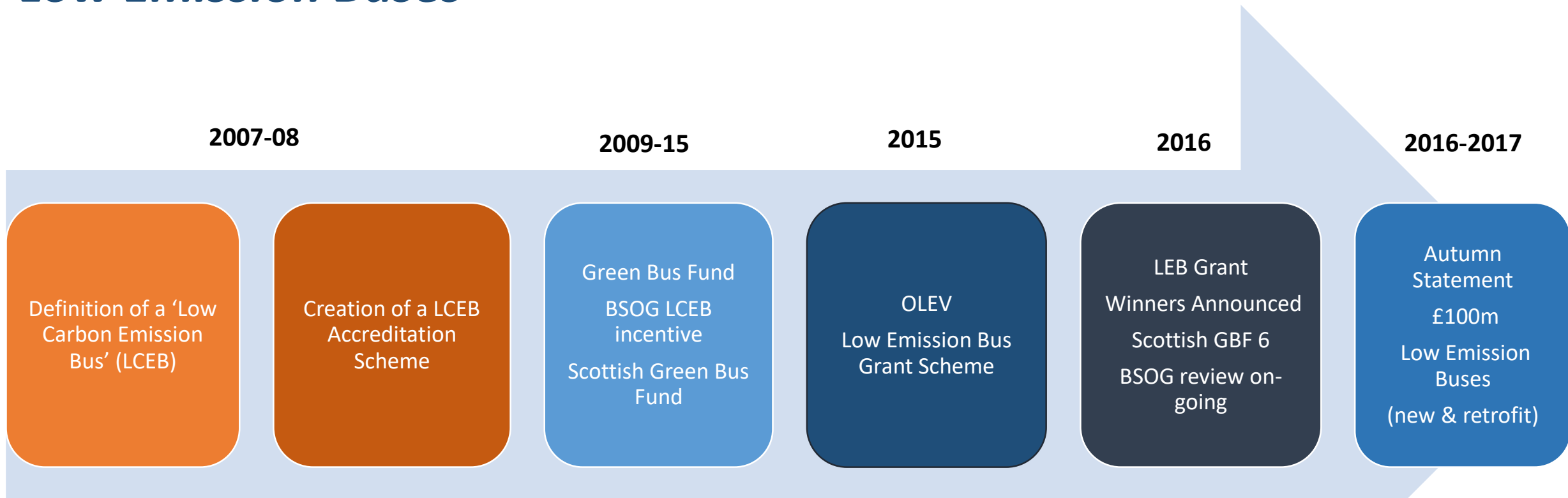
# National Policy Outlook

Low Emission Bus Workshop – Manchester  
Thursday 30<sup>th</sup> March 2017



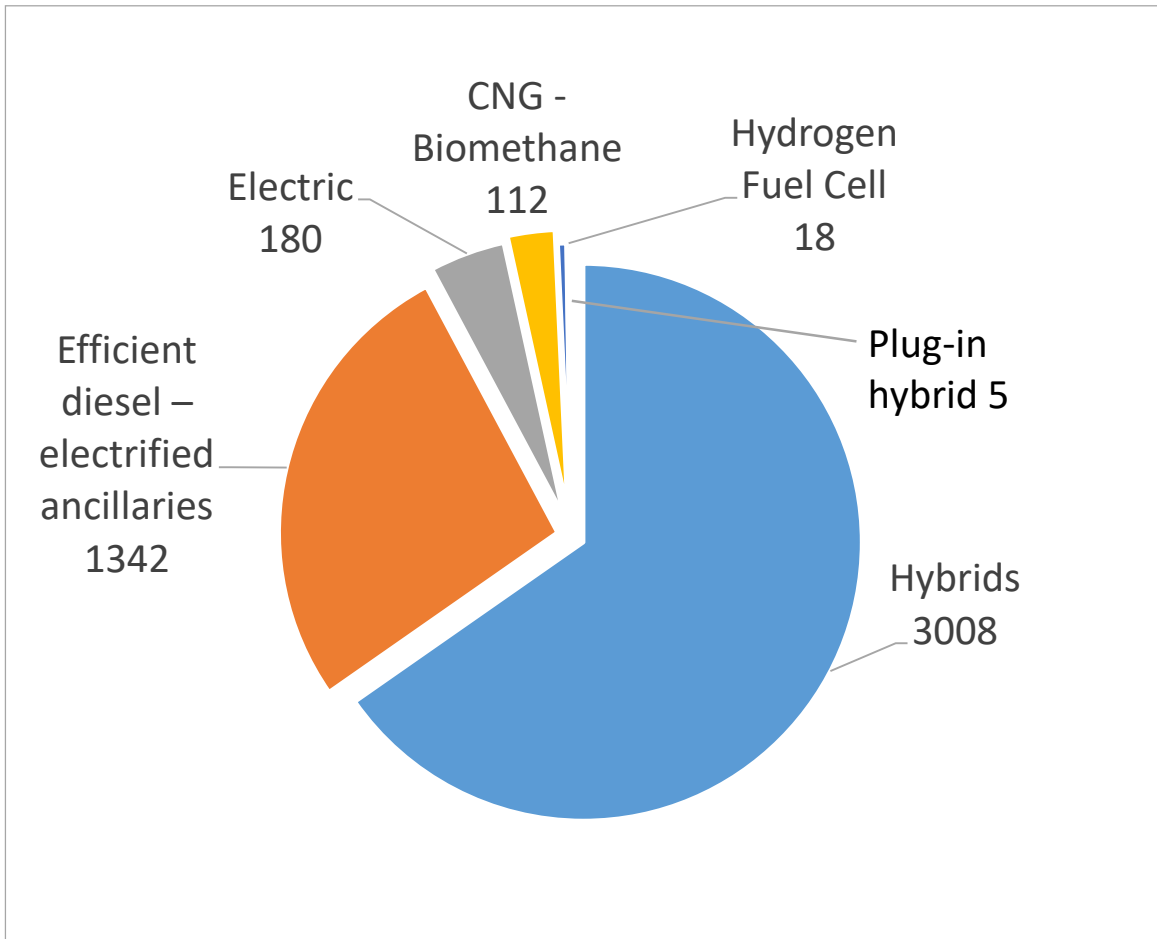
**Gloria Esposito, Head of Projects**  
**Low Carbon Vehicle Partnership**

# National Policy Evolution - Low Carbon to Low Emission Buses



LowCVP has influenced Government policy over the last decade

# Low Carbon Emission Buses What's Been Achievements to Date?

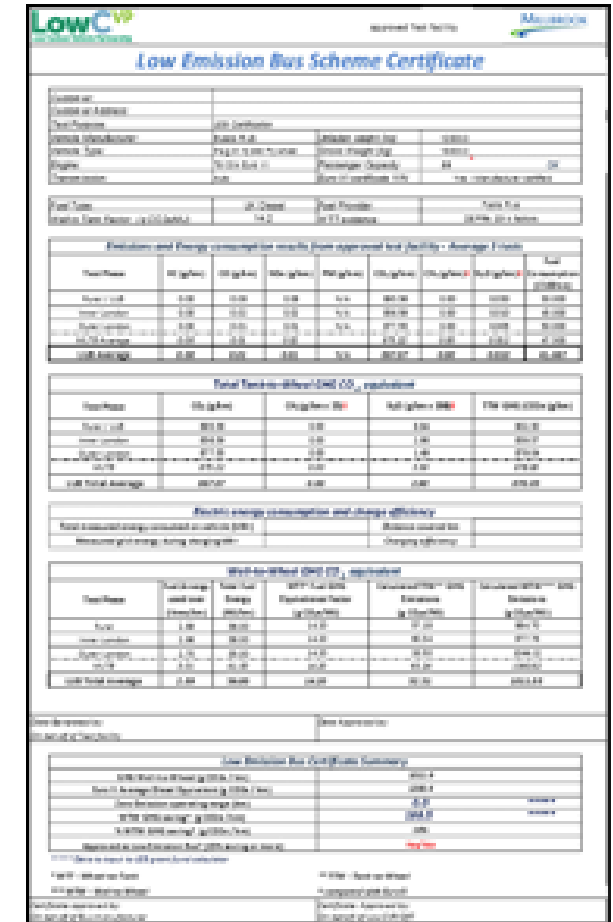


- 4,743 LCEBs in service across 38 UK cities
- LCEB achieve 30% WTW GHG savings vs Euro III diesel equivalent bus
- 44% of new bus registrations in 2016 were LCEB
- >9000 diesel buses running on B20 biodiesel
- Progressed more than any other vehicle sector – 4% new car sales alternative fuel/ULEV



# OLEV Low Emission Bus Scheme

- A Low Emission Bus (LEB): achieves >15% **WTW GHG emission savings** compared to a Euro V diesel bus & achieves the **Euro VI engine standard or equivalent**
- **Low Emission Bus Accreditation Scheme** – Uses representative real world bus cycle (UK LowCVP LUB cycle) to measure emission and operational performance of an LEB
- **Low Emission Bus Grant Scheme**
  - Funding based on WTW GHG emission savings of an LEB
  - Additional funding for zero emission capable miles
  - Funding for infrastructure
- 2016 scheme funded 326 LEBs
- Awaiting launch of OLEV £100m funding for LEBs (new and retrofit)



**Low Emission Bus Scheme Certificate**

Issued on: [Date]  
 Issued to: [Name]  
 Vehicle Registration: [Number]  
 Vehicle Type: [Type]  
 Fuel Type: [Type]  
 Mileage: [Mileage]

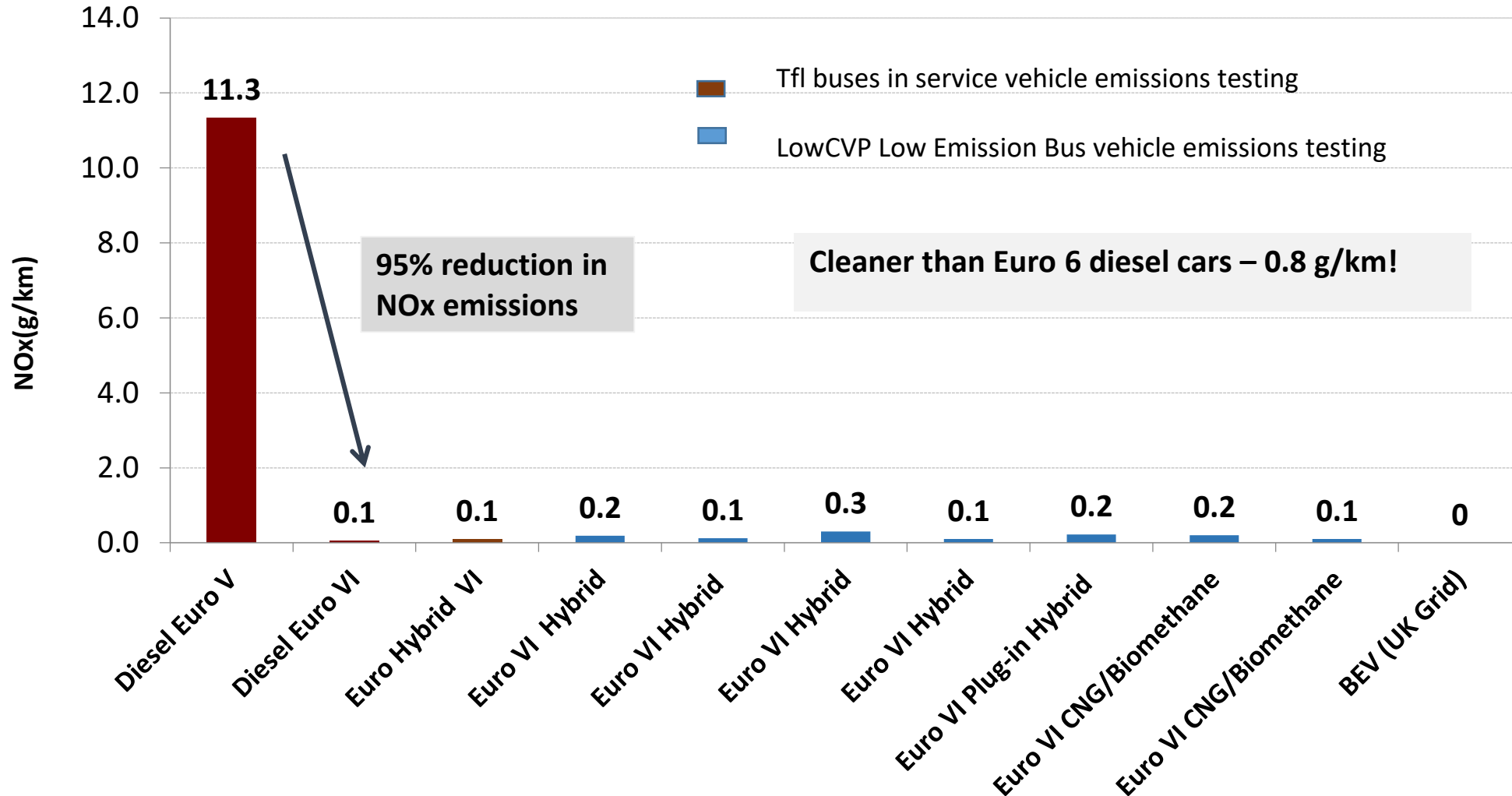
Mode	CO <sub>2</sub> (g/kWh)	CO <sub>2</sub> (g/kWh)	CO <sub>2</sub> (g/kWh)	CO <sub>2</sub> (g/kWh)	CO <sub>2</sub> (g/kWh)	CO <sub>2</sub> (g/kWh)	CO <sub>2</sub> (g/kWh)	CO <sub>2</sub> (g/kWh)
Urban	100	100	100	100	100	100	100	100
Suburban	100	100	100	100	100	100	100	100
Rural	100	100	100	100	100	100	100	100
WTW Average	100	100	100	100	100	100	100	100

Mode	CO <sub>2</sub> (g/kWh)	CO <sub>2</sub> (g/kWh)	CO <sub>2</sub> (g/kWh)	CO <sub>2</sub> (g/kWh)
Urban	100	100	100	100
Suburban	100	100	100	100
Rural	100	100	100	100
WTW Average	100	100	100	100

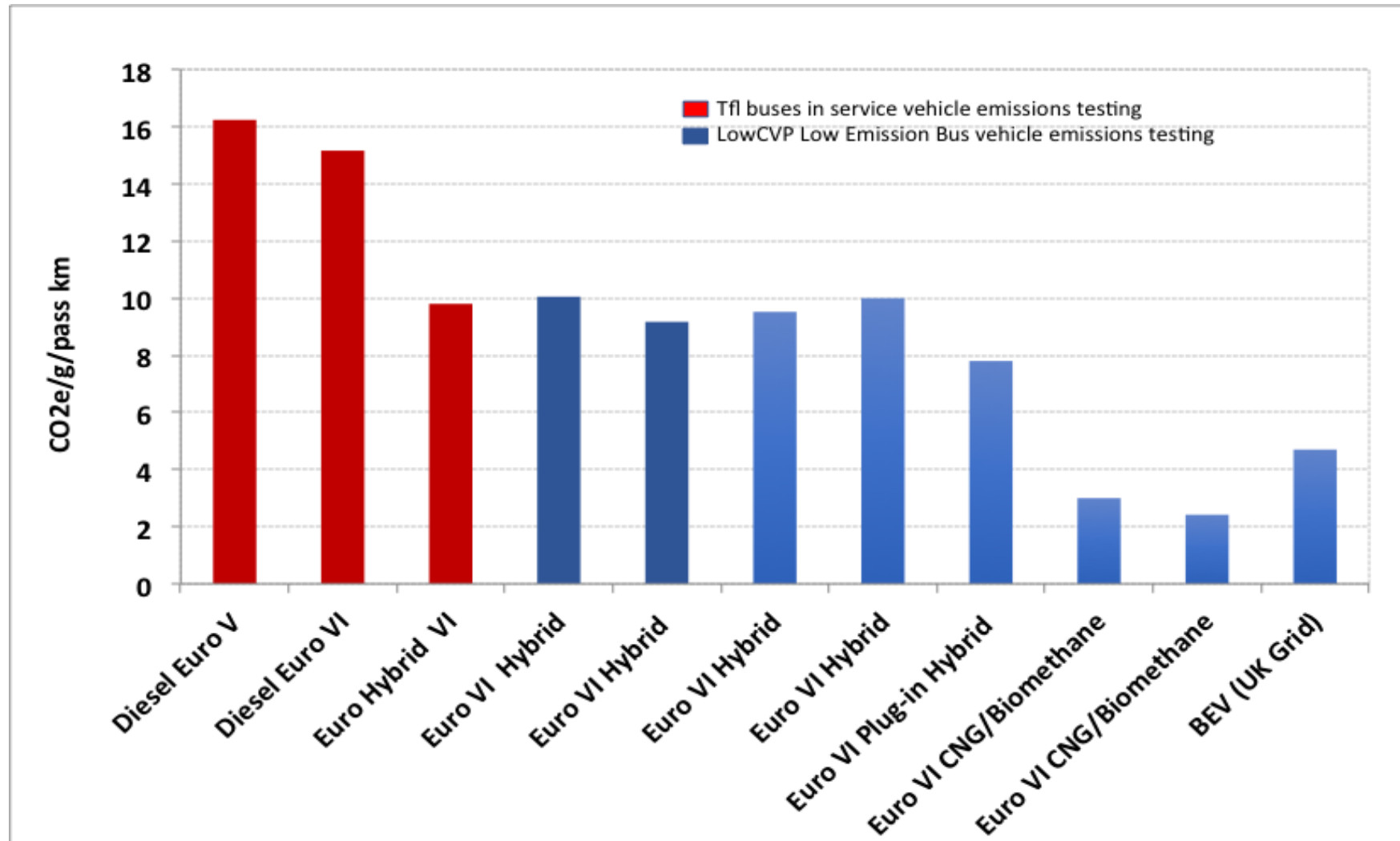
**WTW GHG Emission Savings Summary**

Mode	WTW GHG Emission Savings (%)
Urban	15%
Suburban	15%
Rural	15%
WTW Average	15%

# Euro VI buses are achieving very low NOx emissions – don't try to pick winners!



# WTW CO<sub>2</sub>e performance varies for different LEBs important to consider vehicle technology and low carbon fuels



# National Air Quality Action Plan

## Joint Air Quality Unit

- Focus on reducing NO<sub>x</sub> emissions from road transport to meet compliance with NO<sub>2</sub> Limit Value by 2020
- Creation of **Clean Air Zones** to improve air quality
- Strong emphasis on the shift to cleaner vehicles – new or retrofit of diesel vehicles required to meet Euro VI or equivalent for HDV (Euro 6 diesel, Euro 4 petrol LDVs).
- Two types of Clean Air Zones
  - ❖ Mandatory: ‘charging’ zone entry based on vehicle emission standards  
Five regions identified + London ULEZ – **All include buses**
  - ❖ Non-mandatory: local authorities adopt range of local measures
- Draft National Air Quality Action Plan due to be released for consultation mid April, final report July. Many more CAZ likely to be announced.



# *Opportunities for Retrofitting Older Diesel Buses*

- Various options for retrofitting older diesel buses to achieve high NOx emission reductions in CAZ – examples exhaust after treatment(SCR), engine conversion to hybrid or electric powertrain.
- OLEV £100m for Low Emission Buses will include retrofit technologies, first vehicle class to be offered funding.
- Accompanied by a Clean Vehicle Retrofit Technology Accreditation Scheme – being developed by LowCVP to certify the NOx emission reduction performance of different retrofit technologies
  - Emission limit values – air pollutant and GHG emissions
  - Vehicle emission testing procedures (representative bus drive cycle)
  - Assessing methods for in service durability of retrofit equipment





# Huge opportunity for the bus industry to set itself up for the future as THE urban mobility solution

