

# Lower Carbon and Cleaner Air: Opportunities for Buses

Low Emission Bus Workshop Glasgow

SEC, 8<sup>th</sup> March 2018



**LowC<sup>VP</sup>**  
Low Carbon Vehicle Partnership

Connect | Collaborate | Influence



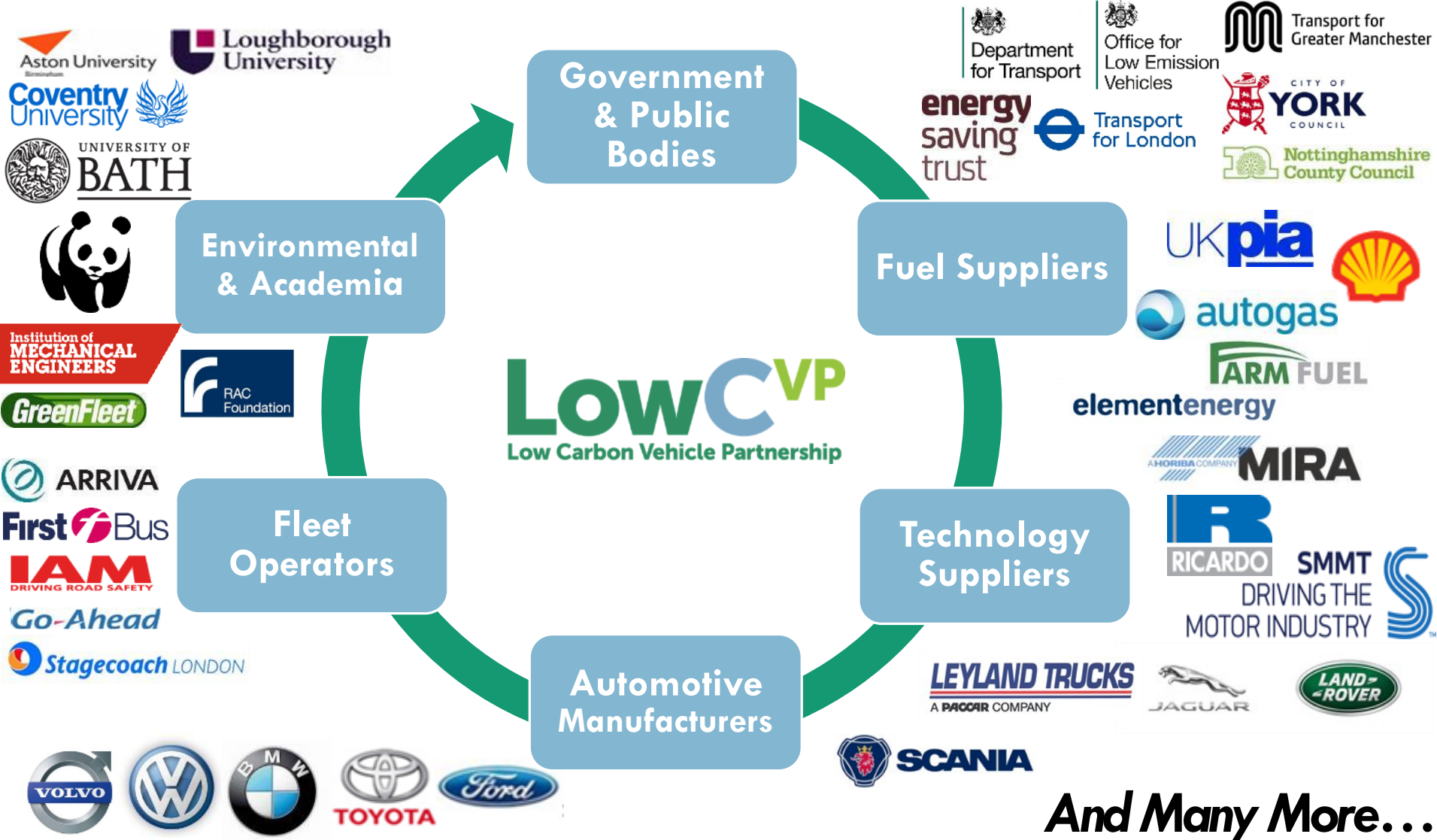
**Daniel Hayes**

Project Manager

Low Carbon Vehicle Partnership

# LowCVP: A unique public-private membership organisation, building evidence and creating robust policies and innovation in the UK

**LowCVP**  
Low Carbon Vehicle Partnership  
Connect Collaborate Influence

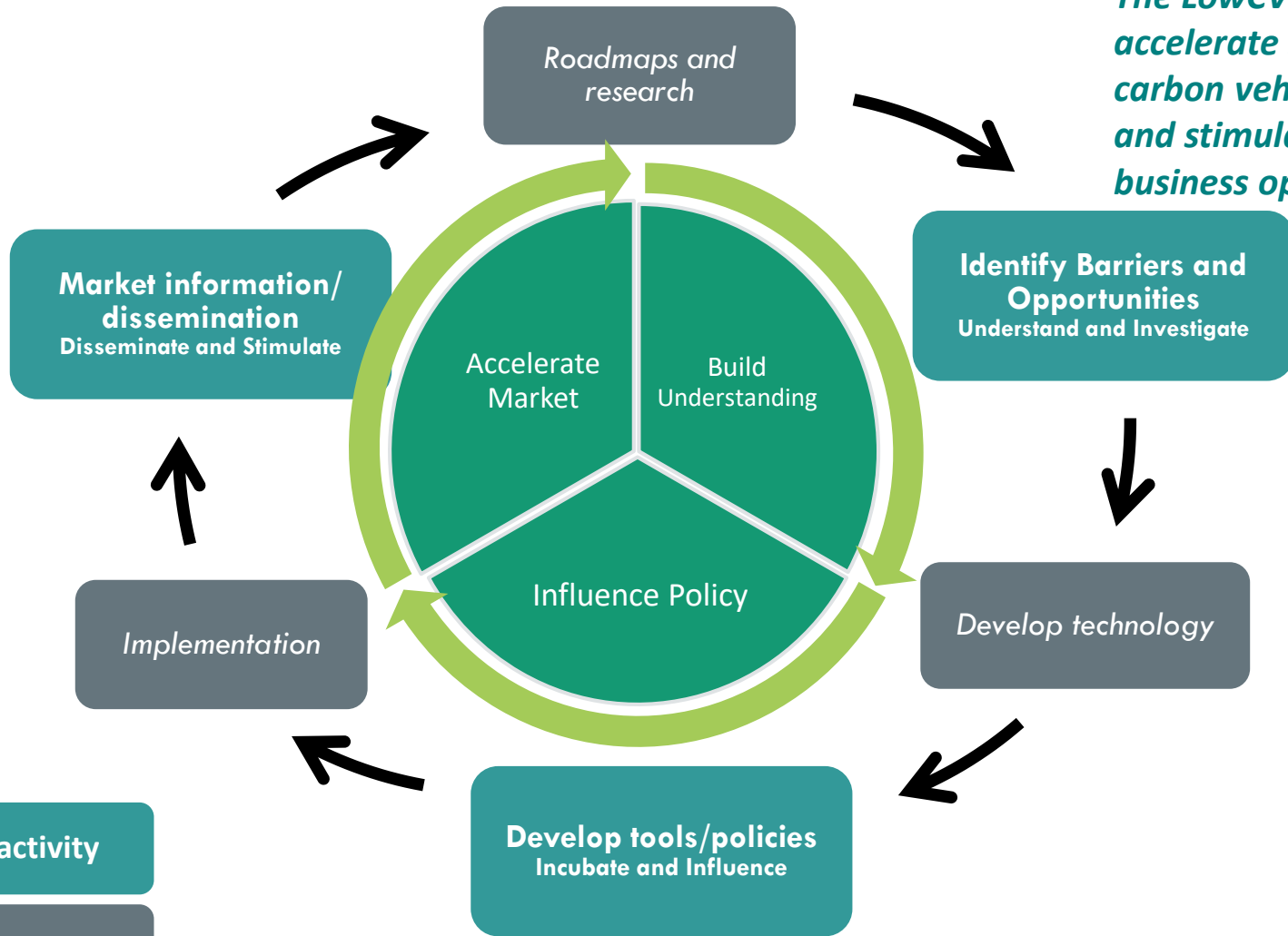


*And Many More...*

# LowCVP Activity & Policy Cycle

- Robust Research, Policy and Information

*The LowCVP exists to accelerate shift to low carbon vehicles and fuels and stimulate UK business opportunities*



Key:

LowCVP activity

Member organisations

# National UK Bus Policy Evolution

Development of evidence based bus policy over the last decade to reduce emissions...

**2007-08**

Definition of a Low Carbon Emission Bus (LCEB)

**2009-15**

Creation of a LCEB Accreditation Scheme

**2015-16**

Green Bus Fund  
BSOG LCEB incentive  
Scottish Green Bus Fund 1-5

£30m OLEV  
Low Emission Bus Grant Scheme  
Scottish GBF 6

**2016-2018**

£3m SGBF 7  
B.E.A.R. Retrofit  
£40m CBTF

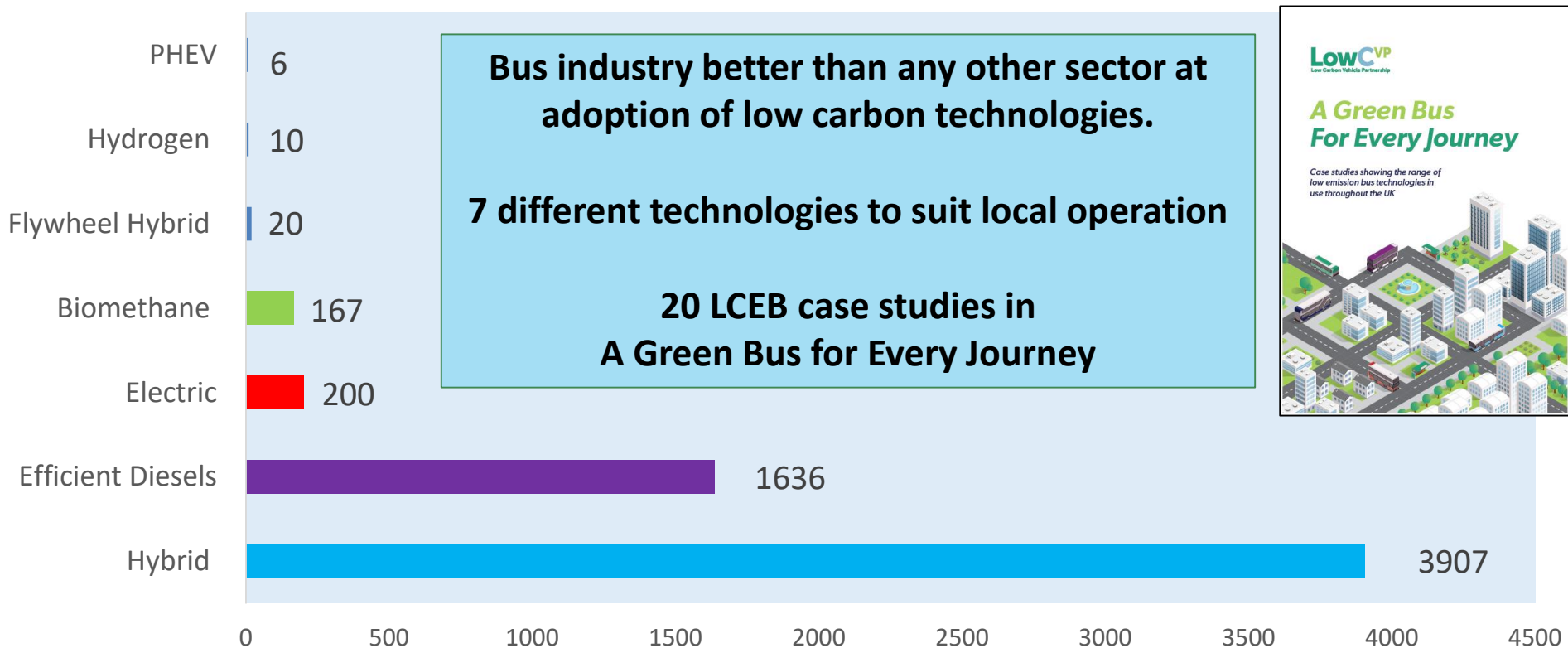
Defining an Ultra Low Emission Bus  
£50m

... detailed in [The Journey of the Green Bus](#)

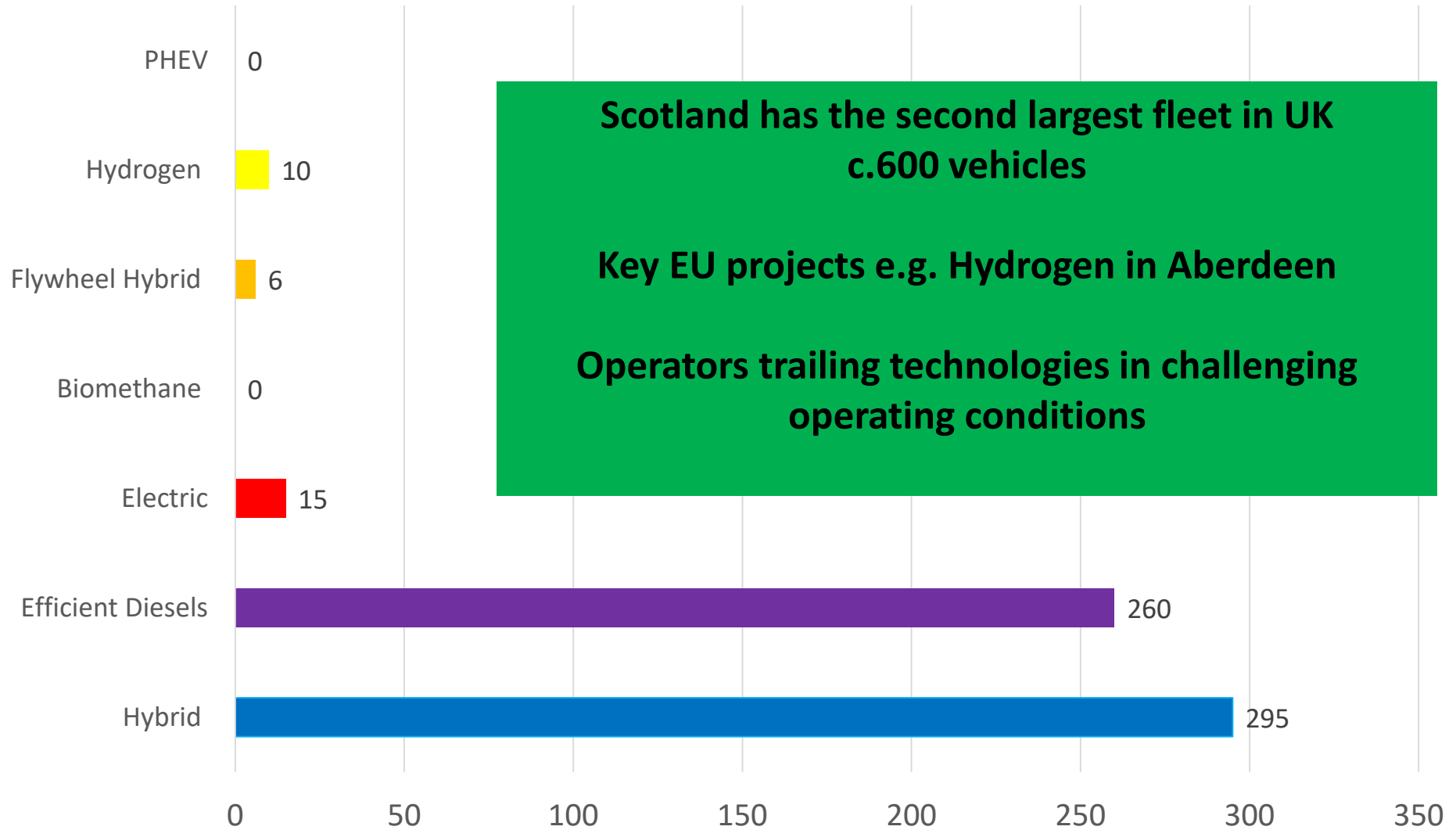


# Low Carbon Emission Buses

- 30% well-to-wheel greenhouse gas saving vs Euro III diesel
- £90m for 1240 LCEBs in England, £14m for 275 LCEBs in Scotland
- Feb 2018: **5,904** LCEBs in service in UK, 10.1 pence /km LCEB BSOG



# LCEBs in Scotland

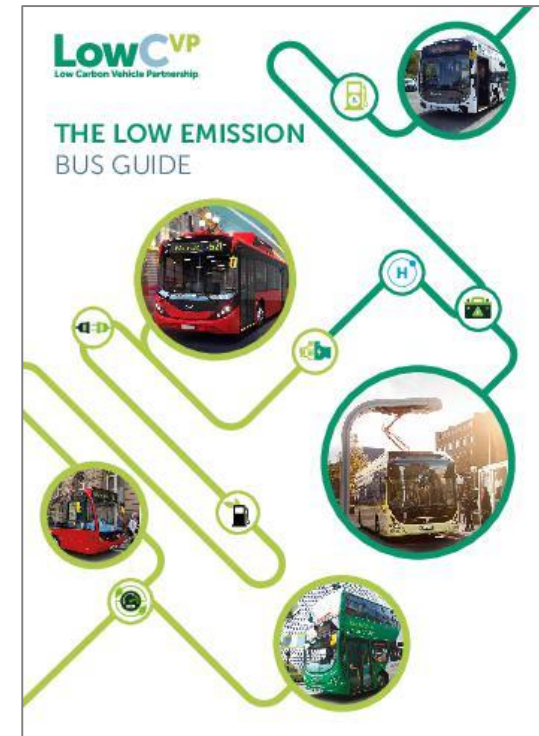


# Low Emission Buses – includes AQ

- 15 % well-to-wheel greenhouse gas saving vs Euro V diesel buses & buses must be Euro VI.
- £41m funding 476 buses in England, 93 LEBs funded by SGBF 6 & 7
- Test certificates published on LowCVP website
- TRL monitoring programme of LEBs in England
- Estimated 2,570 Low Emission Buses in service
- See [Low Emission Bus Hub](#) for more info

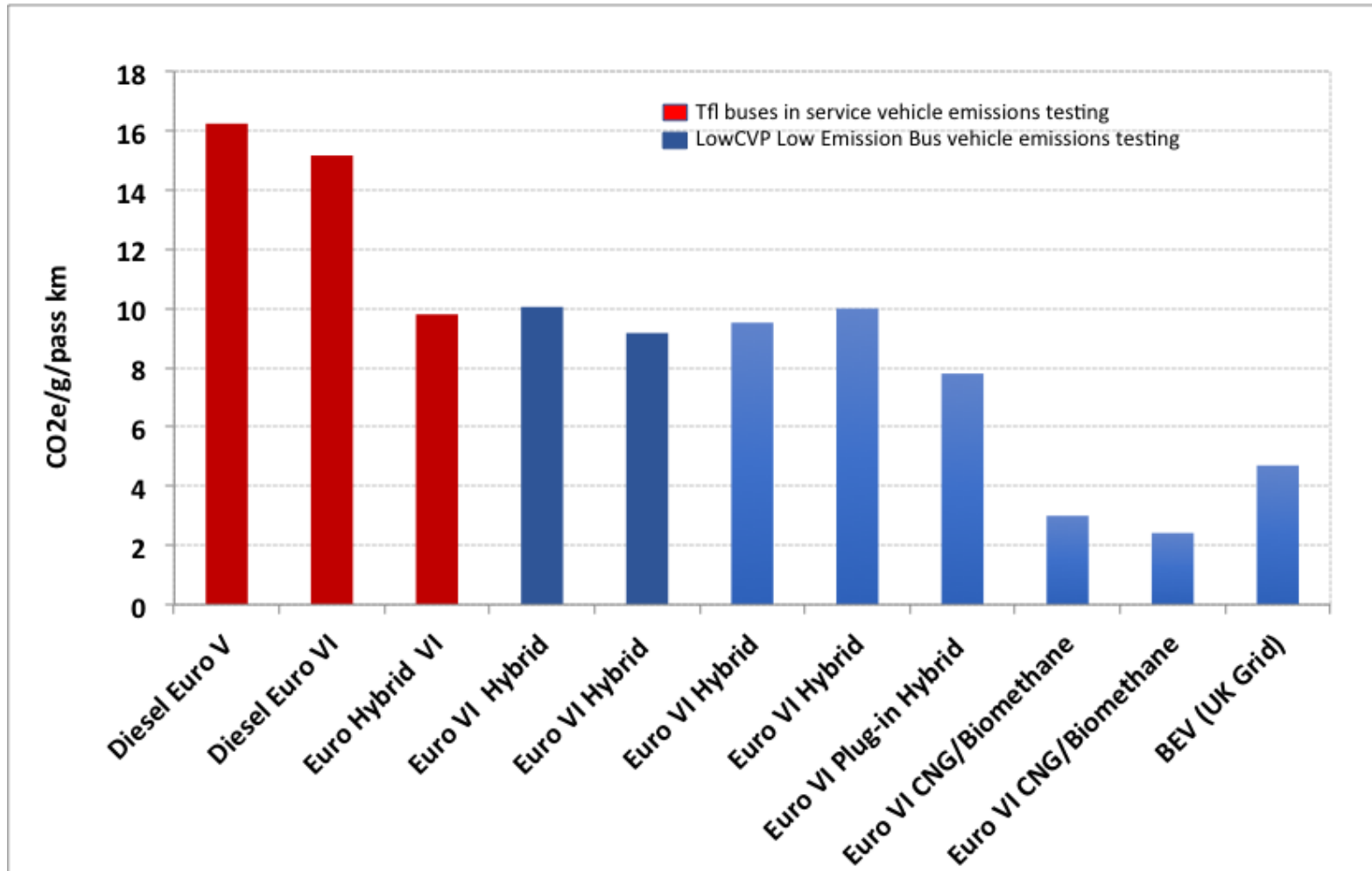
## The Low Emission Bus Guide:

- Accredited Models
- Infrastructure options
- UK and EU Case studies



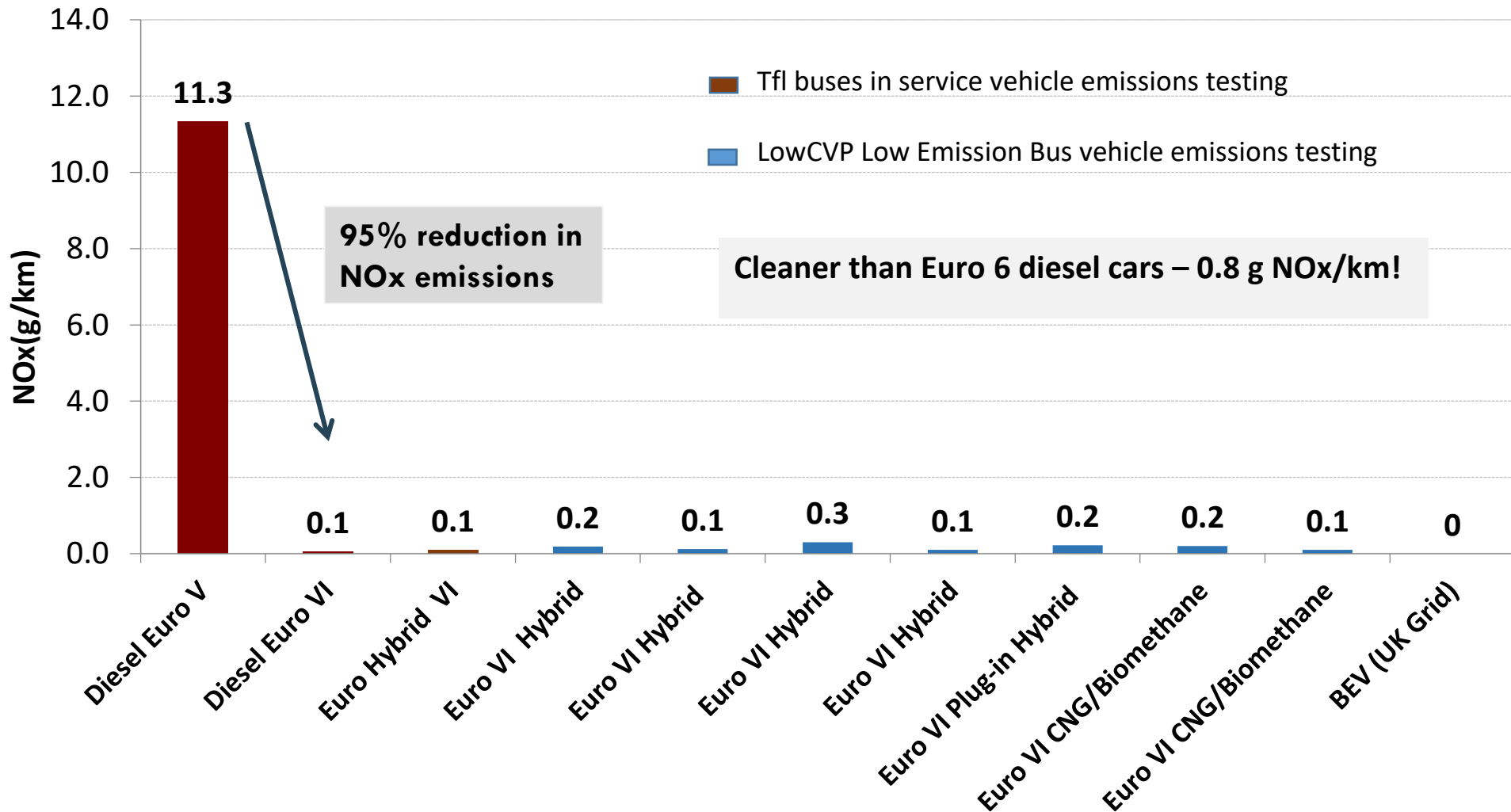
# Well-to Wheel Greenhouse Gas performance

Range of technologies , fuels and infrastructure solutions available – no one solution for all operations!





# Euro VI is clean for all technologies



# Retrofit Solutions

## How to support bus industry to meet Euro VI CAZ criteria?

- Need consistency in standards : Euro VI diesel UK wide

**Clean Air Zones = Low Emission Zone = ULEZ**

- LowCVP evaluation of retrofit programmes 2013-15
- UK accreditation scheme for retrofit technologies

**Clean Vehicle Retrofit Accreditation Scheme (CVRAS)**

- £40m in England & Wales, £1.6m B.E.A.R. 1 in Scotland
- At least 2,000 buses for potential upgrade in Scotland.
- LowCVP working with industry to encourage solutions for coaches and trucks
- LowCVP looking to develop Low Carbon Coach scheme



# Next Gen: Ultra Low Emission Bus

- LowCVP conducted test programme of 8 Euro VI diesels
- Test Cycle Development - even more representative test e.g. temperature of test cell to 10°C / cabin heating turned on

## Ultra Low Emission Bus Definition – foster ambition

- 30% well-to-wheel GHG savings vs **Euro VI** baseline
- Funding encourage zero emissions mileage (Road to Zero)
- Continue to encourage vehicle efficiency improvements.
- Align terminology with other vehicle sectors – future use in CAZ?



- Buses are part of the solution to tackle AQ and climate change.
- Action is being taken to accelerate the uptake of the latest technologies.
- Pragmatic approach to fleet renewal, retrofit to be supported.

## Review of Green Bus Fund and support mechanisms

- Working with LowCVP and CPT to ensure best design of grants
- Introduction of **new tiered LCEB BSOG** support during 2018/19.
- Green Bus Fund will remain the same for 2018, but reformed in 2019.
- 2019 GBF to provide **support for infrastructure** for first time.
- £10m loan available to operators to improve emissions of fleet, focused on fleet renewal but will compliment LEZ funding.

# Facing challenges together

- Improving Air Quality will benefit all (business & public)
- Need pragmatic approach given timescales and target all vehicles.

Forming partnerships will benefit all:

- Bus need to seize opportunity = Urban Mobility Solutions
  - Range of options for different operations
  - Clean & Low Carbon – catalyst for other vehicle types
  - Focus on emissions/ passenger km
- Local authorities should support bus priority measures. Operators will invest if supported.

Long term: Zero Emission Zones

Industry and Gov't need to work together to tackle challenges

# Thanks for listening.



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## Interested in joining the Partnership?

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