LowCVP
Low Carbon Vehicle Partnership

Connect
Collaborate
Influence

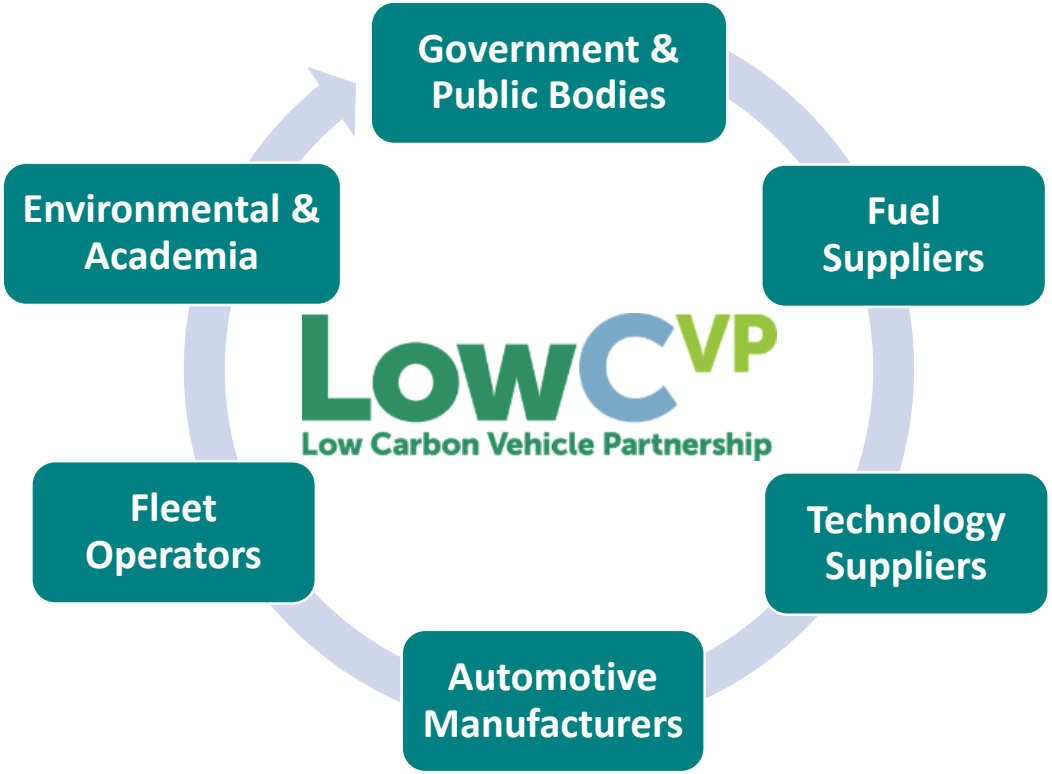
Low Emission Commercial Vehicles

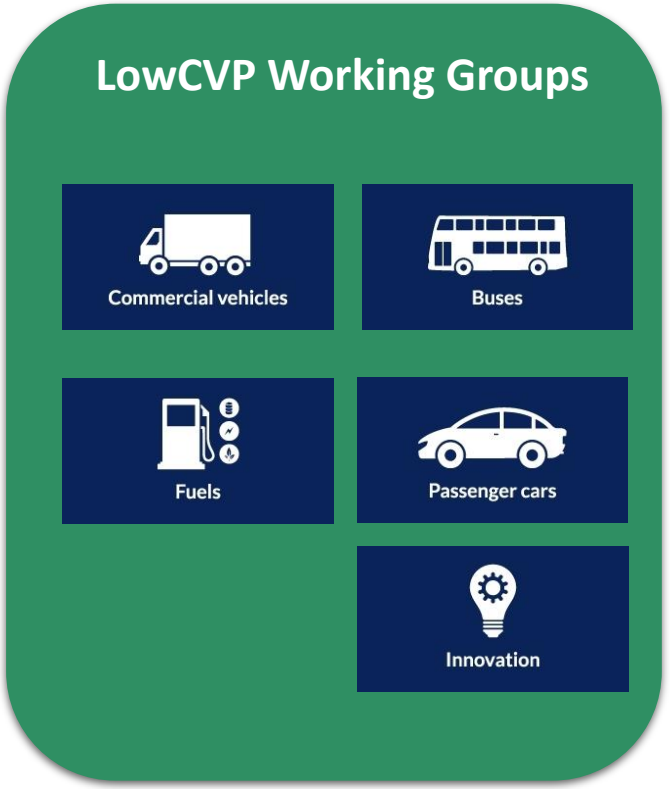
Policy-UK– 18 Oct 2016

Andy Eastlake

Managing Director - LowCVP

LowCVP is a unique public-private membership organisation that exists to '*accelerate the shift to low carbon vehicles and fuels and stimulate UK business opportunities*'

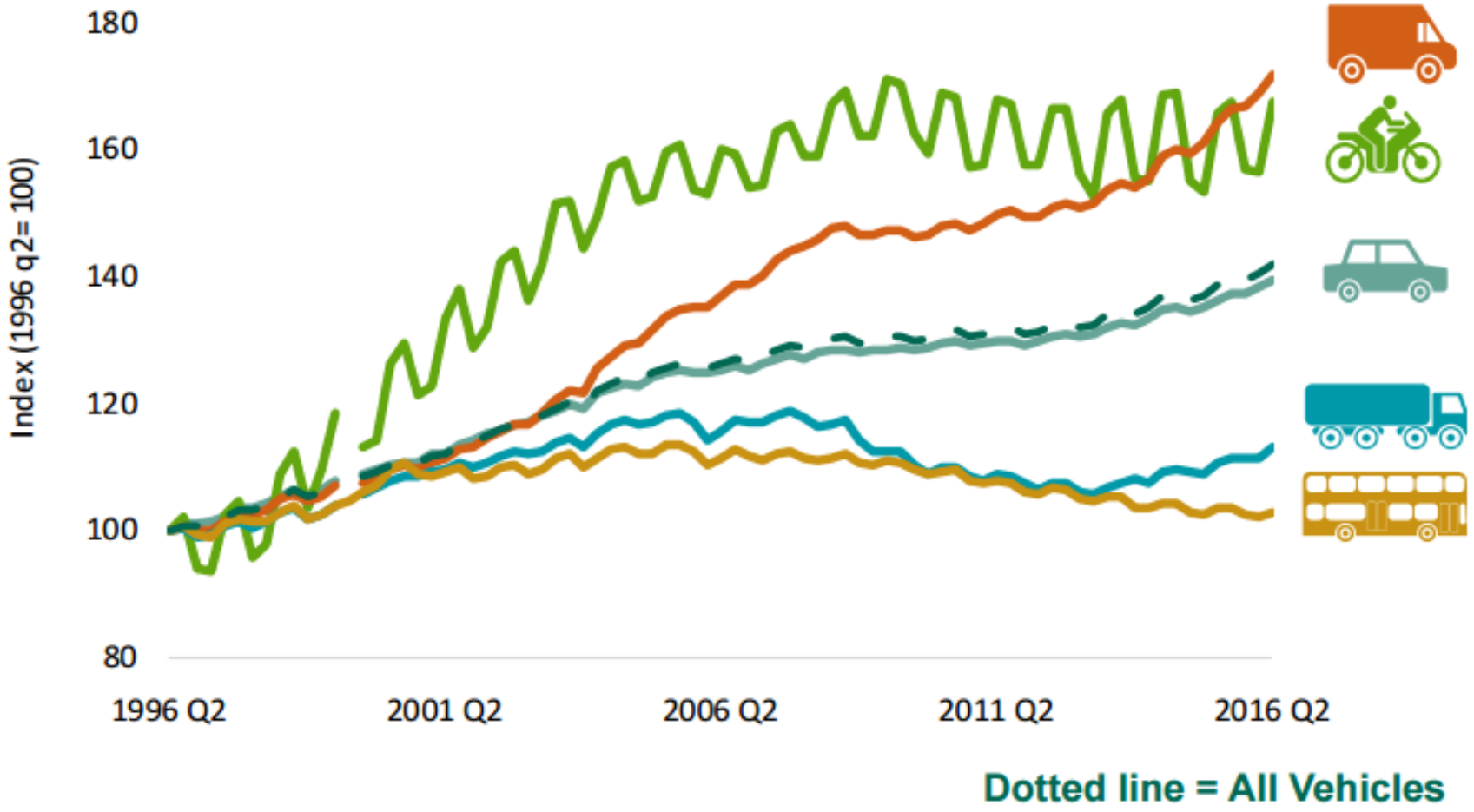




Commercial goods vehicles: The next big (low) carbon opportunity?

LowCVP
Low Carbon Vehicle Partnership

Figure 5: Licensed vehicles by type, GB: Q2 1996 - Q2 2016

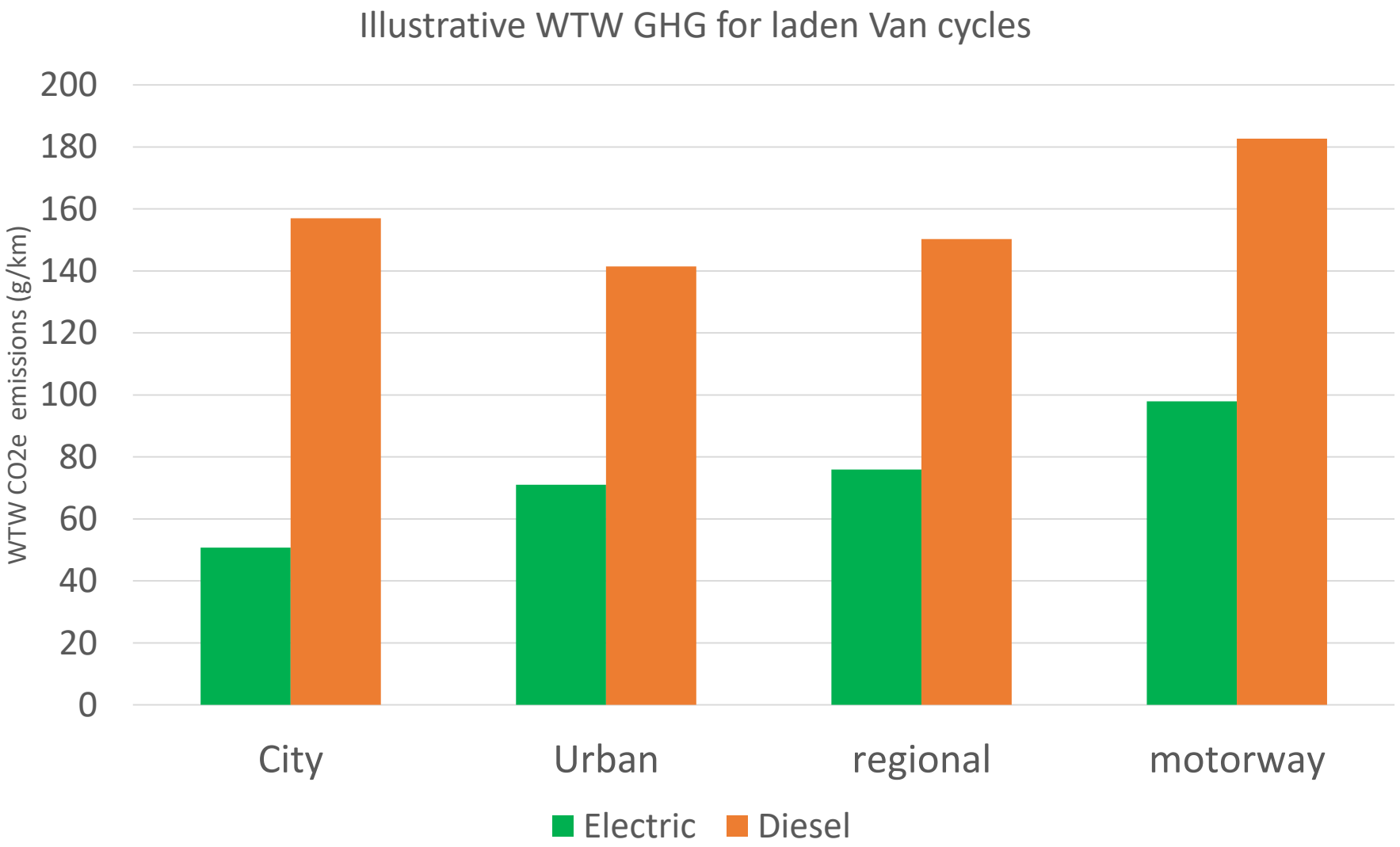


The road to robots?

LowCVP
Low Carbon Vehicle Partnership

	SAE level	Name	Steering, acceleration, deceleration	Monitoring Driving Environment	Fallback Performance of Dynamic Driving Task	System Capability (Driving Modes)
Human monitors environment	0	**No automation** The full-time performance by the *human driver* of all aspects of the *dynamic driving task*, even when enhanced by warning or intervention systems				n/a
	1	**Driver assistance** The *driving mode*-specific execution by a driver assistance system of either steering or acceleration/deceleration using information about the driving environment and with the expectation that the *human driver* perform all remaining aspects of the *dynamic driving task*				Some driving modes
	2	**Partial automation** The *driving mode*-specific execution by one or more driver assistance systems of both steering and acceleration/deceleration using information about the driving environment and with the expectation that the *human driver* perform all remaining aspects of the *dynamic driving task*				Some driving modes
Car monitors environment	3	**Conditional automation** The *driving mode*-specific performance by an *automated driving system* of all aspects of the dynamic driving task with the expectation that the *human driver* will respond appropriately to a *request to intervene*				Some driving modes
	4	**High automation** The *driving mode*-specific performance by an automated driving system of all aspects of the *dynamic driving task*, even if a *human driver* does not respond appropriately to a *request to intervene*				Some driving modes
	5	**Full automation** The full-time performance by an *automated driving system* of all aspects of the *dynamic driving task* under all roadway and environmental conditions that can be managed by a *human driver*				All driving modes

Importance of application v technology



No longer alternative?

BIGGER THINKING SMALLER VEHICLES
LowCVP

Examples of commercial vehicles

(m.i.r.o. ≤ 600kg for L7e-CU, excluding battery)

ENVIRONMENT
ECONOMY
SOCIETY

Goupil (G3), made in France

Libner BIL [for last-mile logistics], made in France

Comarth (CR Sport), made in Spain

Loyds (Paxster), made in Norway

Kyburz (DXP), made in Switzerland

Loughborough University

A ‘truckload’ of technology opportunity

- Aero
- Tyres
- Fuel
- Lightweighting
- Engine
- Ancillaries
- Vehicle selection

Efficient vehicles, lower carbon, cleaner air

LowCVP Low Carbon Vehicle Partnership

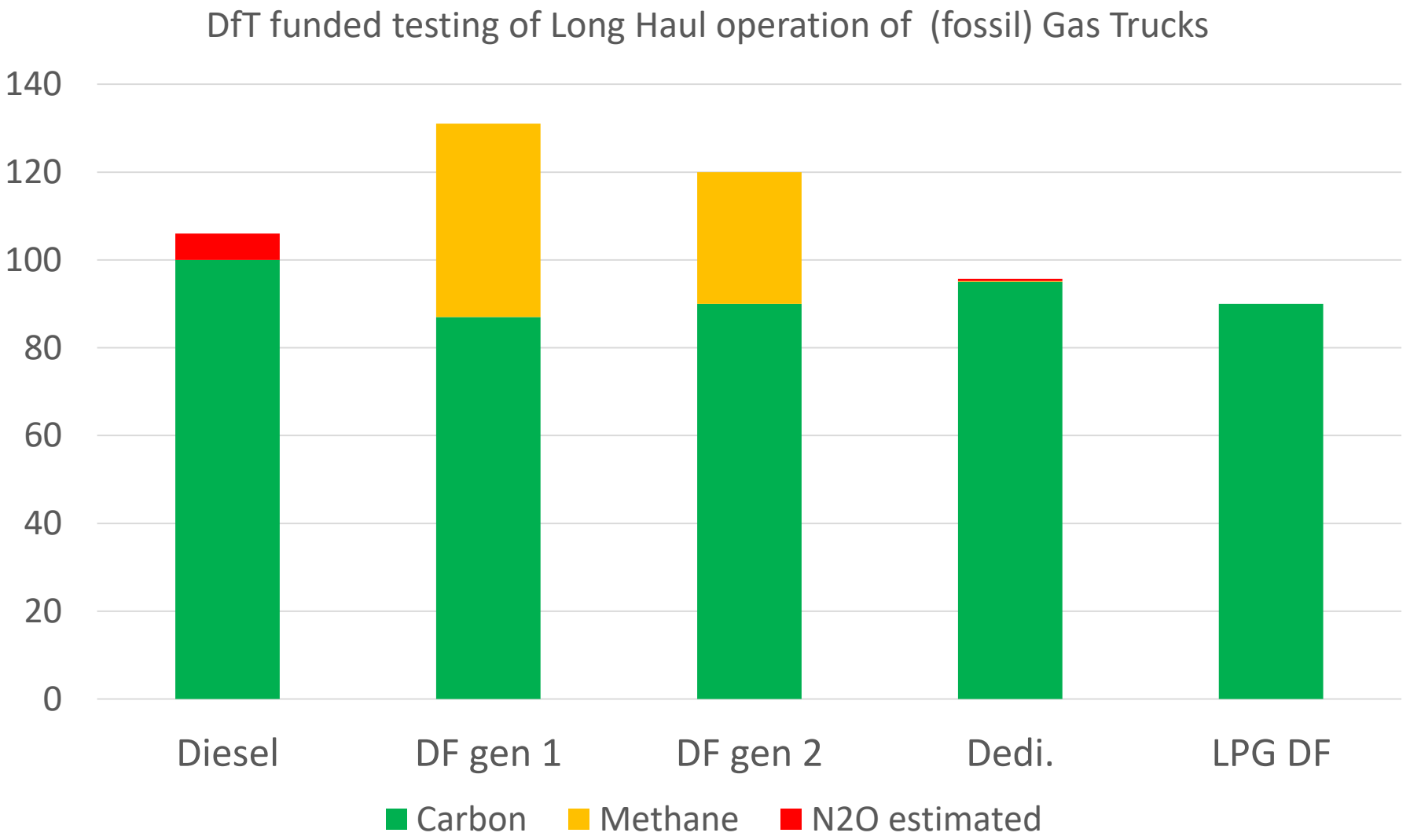
- **Creating the platform for robust support of low emission and fuel efficient technologies**

  - **Connect**: With privileged access to information, you'll gain insight into low carbon vehicle policy development and into the policy process.
  - **Collaborate**: You'll benefit from many opportunities to work – and network - with key UK and EU government, industry, NGO and other stakeholders
  - **Influence**: You'll be able to initiate proposals and help to shape future low carbon vehicle policy, programmes and regulations

LowCVP is a partnership organisation with over 180 members with a stake in the low carbon road transport agenda.

Back up

Relative GHG impact with technology



Relative NOx impact with technology

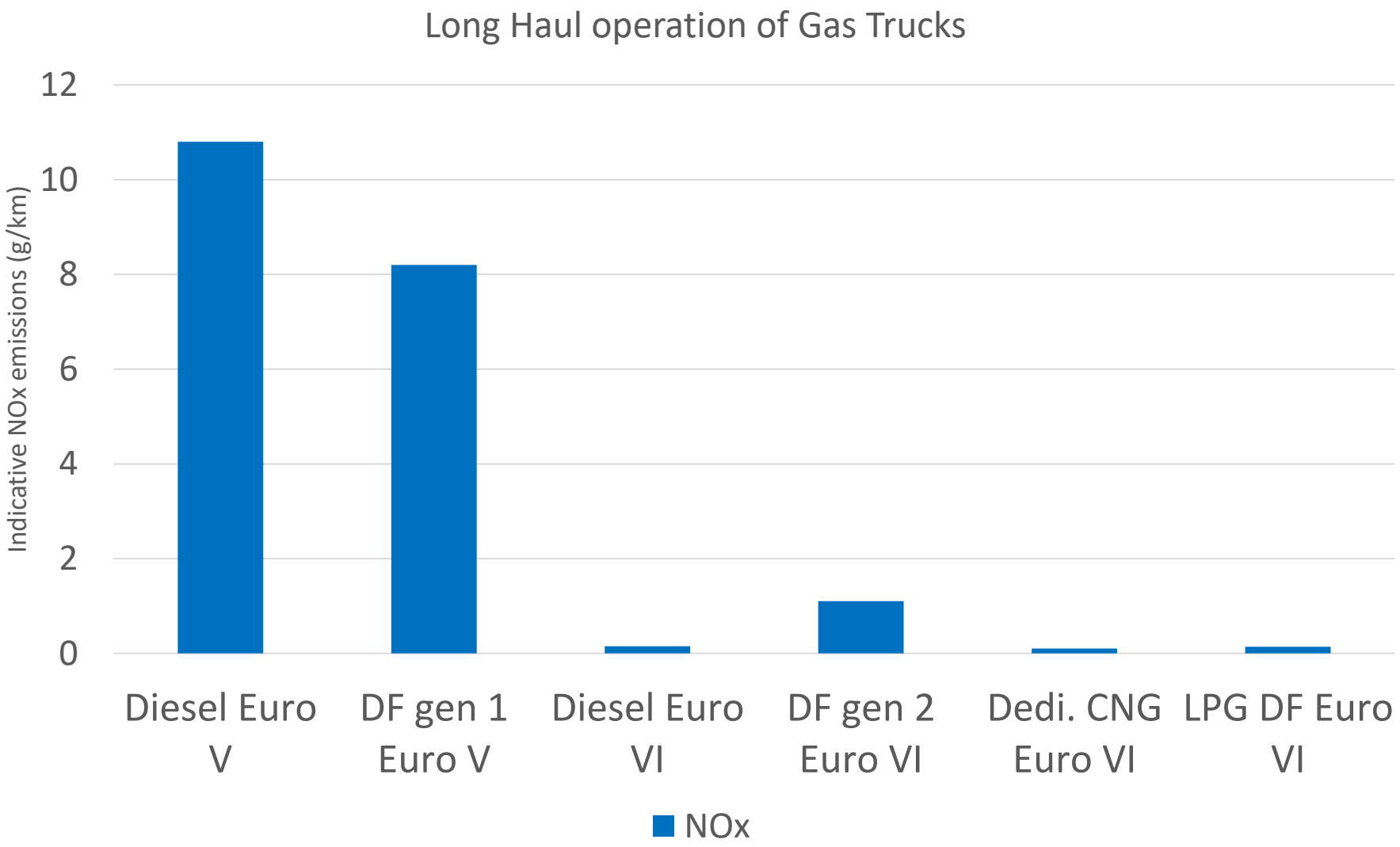


Figure 2: Average NO_x source apportionment on UK road links outside London exceeding an annual mean NO_2 concentration of 40µg/m^3 in 2013