

Deploying Biomethane in the Transport Sector

REA UK Biomethane Day 2018

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National Motorcycle museum • 0205/2018

**ADVANCED BUSINESS
& TECHNOLOGIES**

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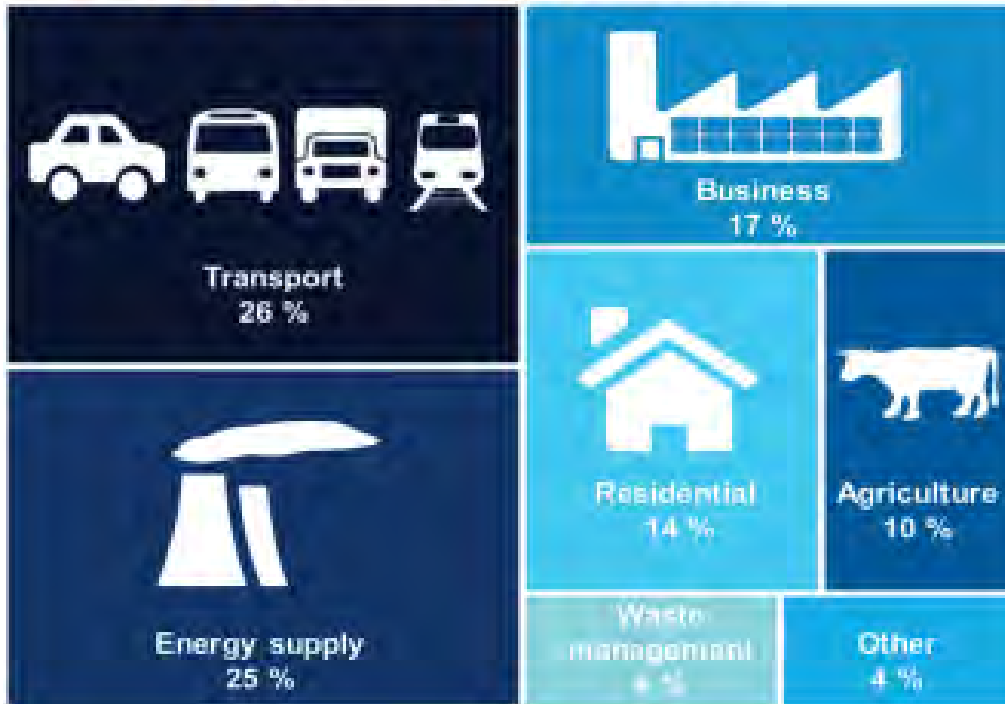


REA Biomethane Day 2018 – Air Liquide

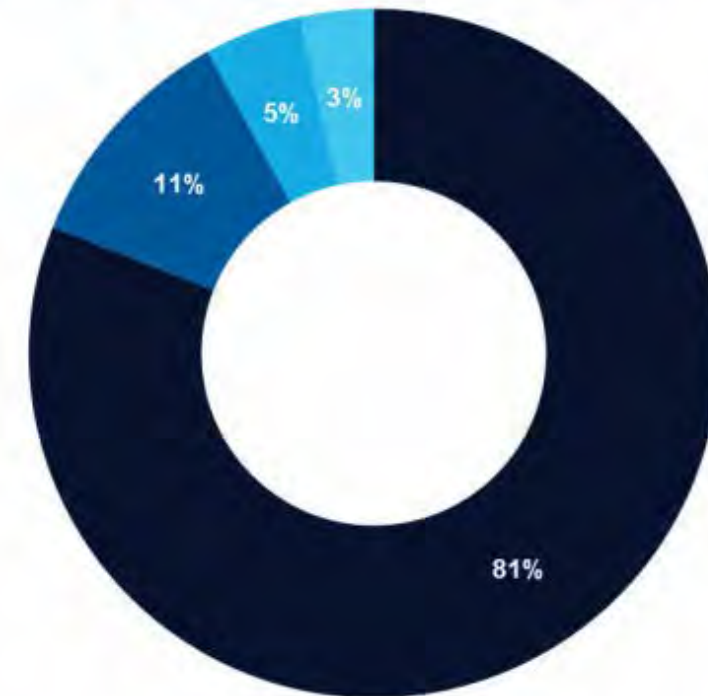
- 1 HGV Sector and Emissions
- 2 Low Emission Freight Trial
- 3 Immediate Testing Plans
- 4 Future

UK Gov Statistics on Transport

Transport becomes the largest emitting sector of UK 2016 greenhouse gas emissions



Greenhouse gas emissions by gas, UK, 2016 (%)



■ Carbon dioxide ■ Methane ■ Nitrous oxide ■ Fluorinated gases

DfT Freight Statistics

Recently released statistics from DfT

Implications

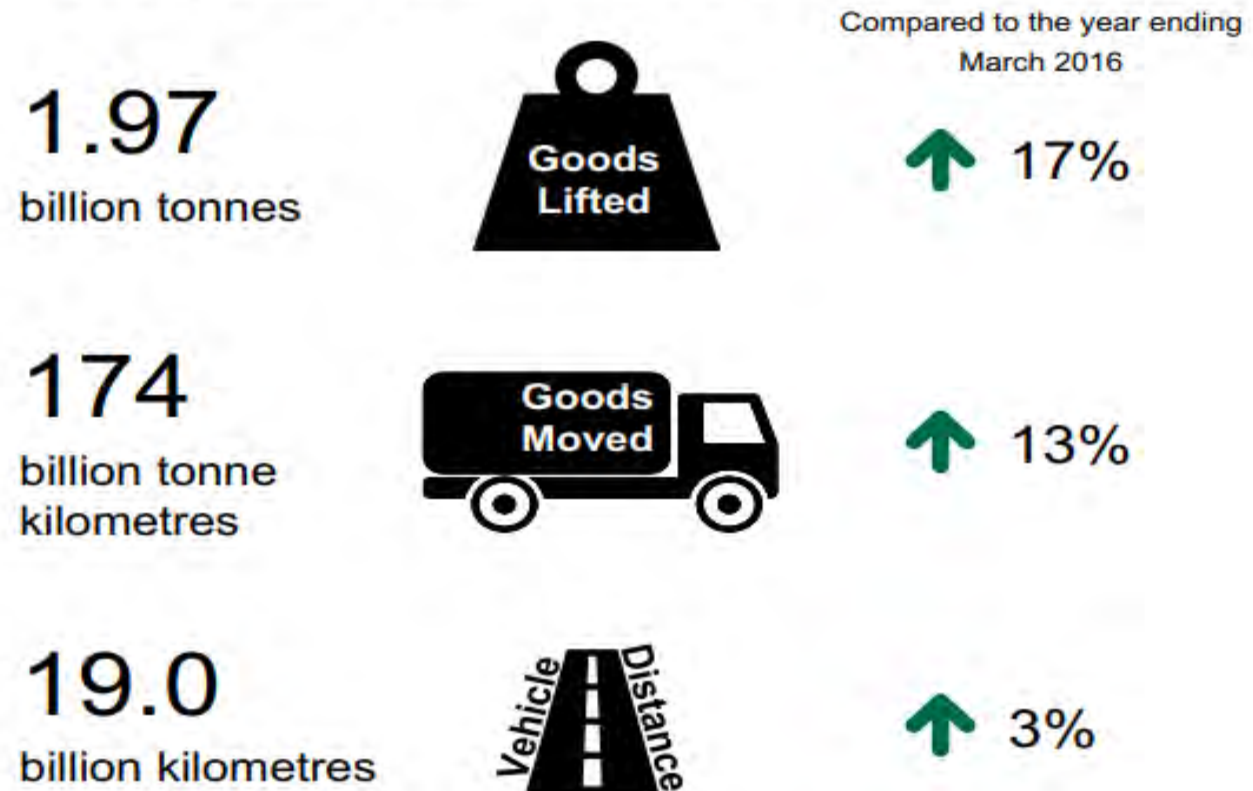
Demand up (record levels)

Payloads up

Efficiency of operations up

Km's driven are up and additional 570 million kms year on year

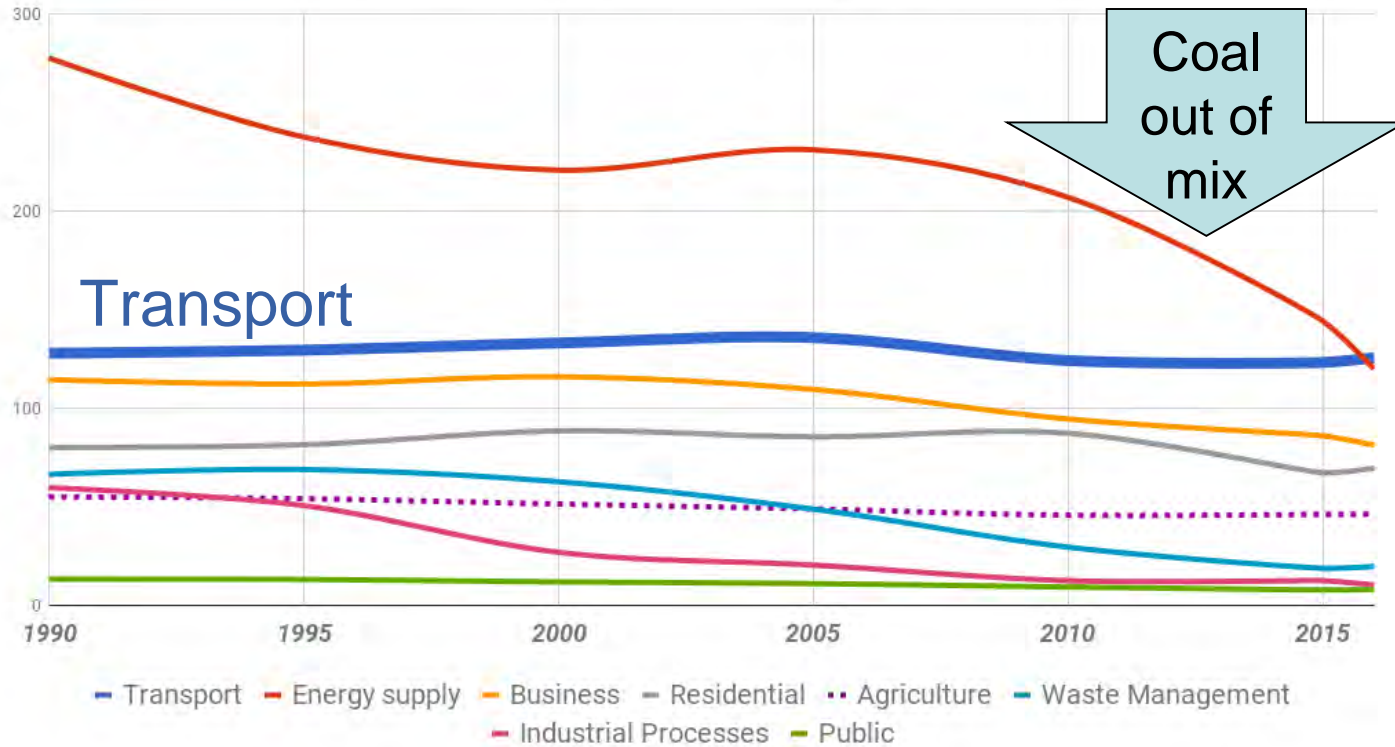
In the year ending March 2017 for GB-registered HGVs operating **in the UK**, there were...



- **Goods lifted and goods moved** by GB-registered heavy goods vehicles in the UK **reached record levels** for the 12 months ending **March 2017.**

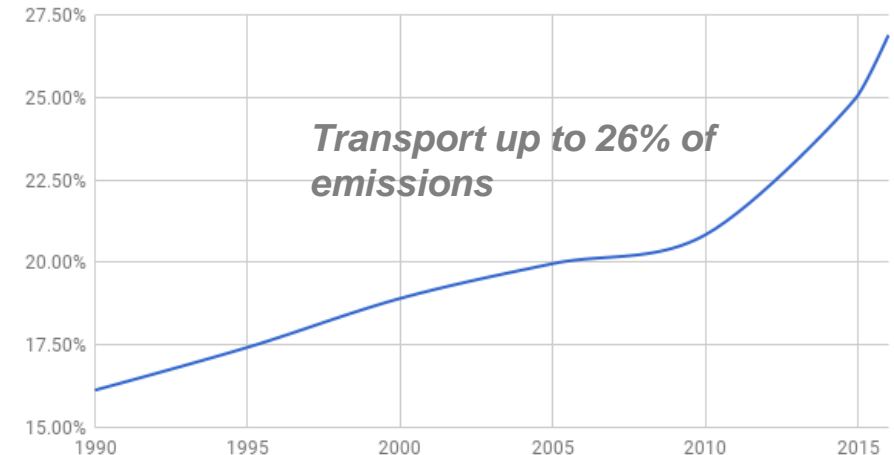
Greenhouse Gas Emissions for UK

Greenhouse Gas Emissions in UK by Sector



Whilst trends are generally positive for GG Emissions real story is Coal out of Energy Mix; Golden Age of Gas & Critical Need to Address Transport
Could be a JB Tweet !

Transport as percentage of total emissions



**Domestic Goods
by Road**

1990

2016

61%

78%

Low Emission Freight Trial – Dedicated to Gas

Air Liquide has been awarded funding by the **Office for Low Emission Vehicles & Innovate UK**, to lead a trial of innovative gas trucks

80 gas trucks

£2.57 million of funding

Innovate UK

4 truck OEMs

6 vehicle operator partners

5 Blueeze units
(first trial in UK)

Including five leading logistics companies,
and a major supermarket chain



KUEHNE+NAGEL



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Evolution of Stations

Containerised station



Multi-fuel station



Flexible smaller-scale solution, to build market

- **Break-even: 10 trucks**
- **Capacity: 25 trucks**

- **Larger multi-energy refuelling facilities**
- **Simultaneous refuelling of (bio)CNG, (bio)LNG, liquid nitrogen for refrigerators**
- **Strong synergies between different fuels**
- **Break-even: 25 trucks**
- **Capacity: 100+ trucks**

Linking Stations to Renewable Gas

Biomethane – Air Liquide



An artist's impression of the commercial BioSNG plant.

BioSNG – APP



- Sources of Biomethane from Waste
- Linking to RTFO
- Renewable Gas key part of Narrative

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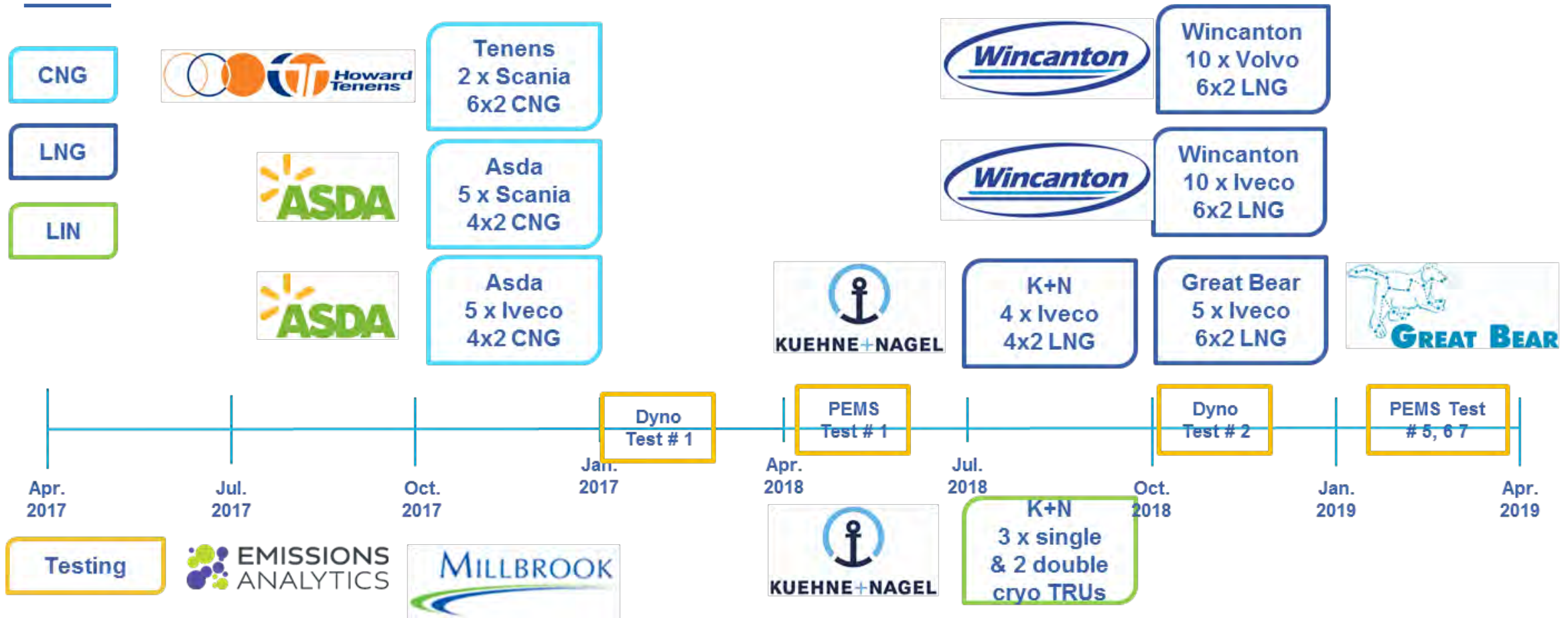
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Deployment Schedule and Testing Plans



The Future

- Stability of the Fuel Duty
- Delivery of Numbers of Trucks at scale by OEM's
- Development of a Network of stations to give effective coverage of main routes and population centres (circa 60 to 70 gives a good network)
- DfT to align to Gas as the Future for Freight (currently building evidence base of which vehicle testing is a part)
- Expansion of Renewable Gas sources for Heat and Transport.



