



Paul Oxford
Business Development Manager

Adrian Heath
National Accounts - Transportation

Who are Autogas Limited?



50%



50%



autogas



The UK's Air Quality Crisis

- 'POOR AIR QUALITY IS A TICKING TIME-BOMB FOR OUR HEALTH'
- 40,000 UK Premature deaths annually attributed to poor air quality
- 9,000 in London
- Self created by dieselization of the UK Vehicle Fleet
- Consequential increase In NO_x, NO₂ and PM
- £20bn cost to the UK Economy
- Client Earth; Supreme & High Court Judgement

Long term solutions won't deliver quickly enough



DieselCar

Automotive
AGV Manufacturing

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Euro 6 – Understanding the new regulations

Posted on [August 13, 2014](#) by [Ryan](#) — [No Comments](#) ↓

The major significance of the Euro 6 regulations for diesel cars is a major squeeze on controlling the emissions of oxides of nitrogen, or NOx as they are termed.

This comes as a result of further evidence of the health risks of urban air pollution specifically related to NOx, and a disappointing reduction in cities like London, where NOx pollution remains stubbornly high.

The new limits are slashed from

EURO 6

UNDERSTANDING THE NEW REGULATIONS

The Monkey's now Clearly on the back of Local Government



What is LPG?

Well you've probably already used it...



Naturally Occurring In Natural Gas Fields



Extracted During Oil Refining



Transported Globally



Transported Nationally



Sold to the motorist



Forecourt set-up



The Autogas Network

- National Coverage, 225 sites
- Largely follows Shell Network Area
- National infrastructure totalling over 1400 sites
- Average 5 miles between LPG sites



Operational Case for LPG

- Running cost savings
- Extensive established refuelling network
- Similar driving characteristics
- No range anxiety
- Lower emissions
- Refuelling similar to petrol & diesel
- No spillage – no ground or water pollution
- Proven technology - Worldwide pedigree & is the 3rd choice of road fuel
- Bunkered B2B refuelling option available



And you're also helping the environment

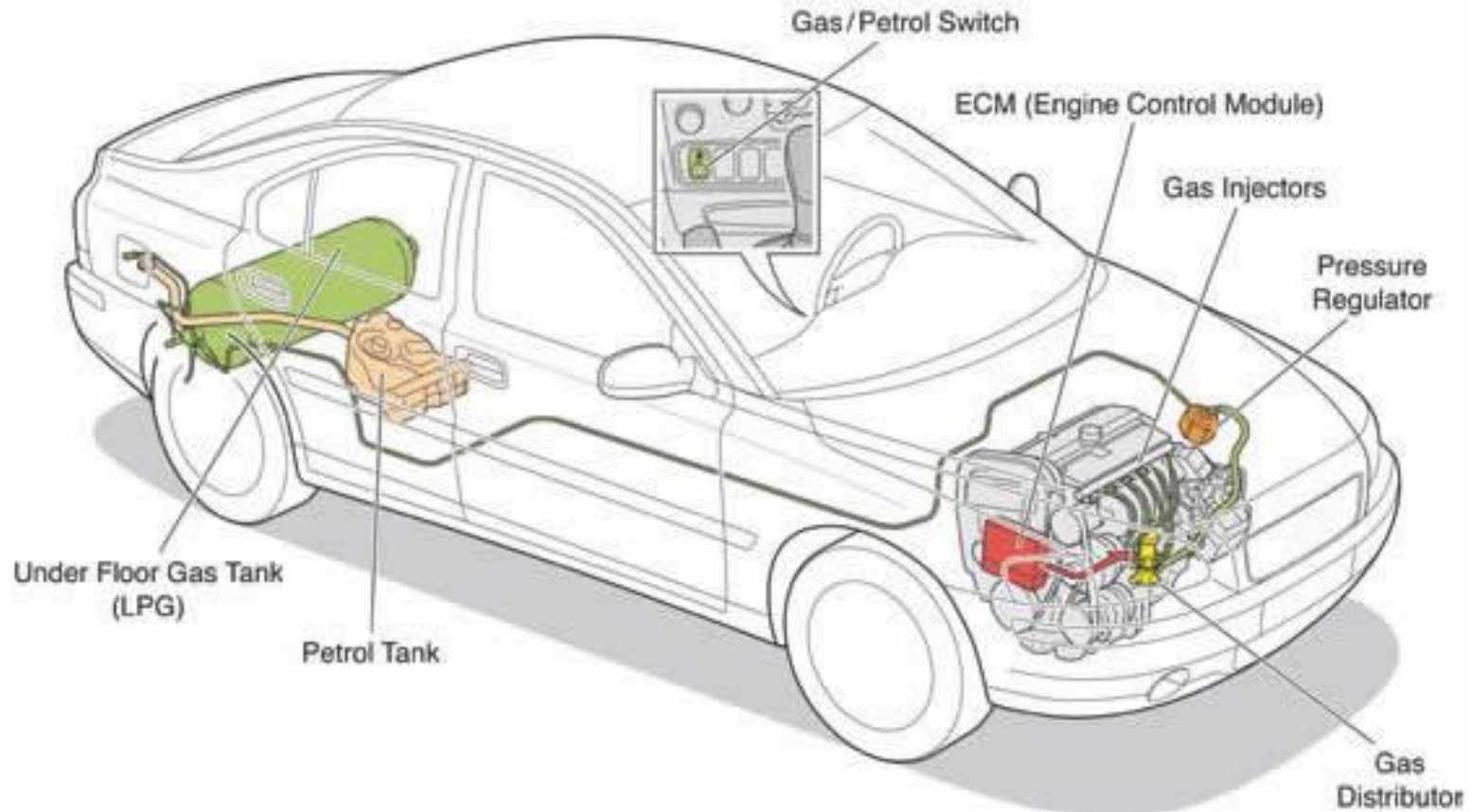
Lowering emissions of:

- CO₂
- CO (Carbon Monoxide)
- PM (Particle Matter)
- NO_x (Oxides of Nitrogen)
- NO₂ (Nitrogen Dioxide)
- And other pollutants present in main grade fuels Inc. Benzene



LPG Conversion of a Petrol Vehicle

Bi-Fuel System (LPG)



Size of the Problem

England & Wales

81,216 Licensed Taxis 170,257 Private Hire Vehicles
Approximately 45,695 TX models (22,500 in London)

That's before even starting to look at LCV's!

Local authority fleets directly operate 28,357 LCV's

Similar environmental benefits could be gained by ditching the diesel & switching to LPG

At present, no OEMs market LPG-ready Light Commercial Vehicles for the UK. However a full range up to 3.5t GVW are available in Europe .
Encouragement is needed to OEM's to make these vehicles available in the UK



LCVs

Citroen Berlingo

Mercedes Citan

Fiat Doblo

Ford Fiesta

Ford Courier / Transit Connect

LDV G10 Van & MPV

Peugeot Partner

Vauxhall Combo

Vauxhall Corsa

VW Caddy

VW Transporter / Caravelle



Taxi's targeted as polluters



Why repower with Autogas?

What is wrong with diesel?



3 diesel powered TX models were tested for emissions
None of the models met any Euro standard

Birmingham City Council NOx Reduction Champion Project



Birmingham NOx Reduction Champion Project

- £500,000 Grant Award from DFT Clean Vehicle Technology Fund
- 63 taxis repowered to run on LPG
- Initially attempts made to re-engineer existing diesel engine to LPG / Petrol
Unsuccessful due to high mileage & wear on these older engines

Autogas solution

- New 2.0L 4-cylinder petrol engine fitted
- Port injected, low pressure turbo
- Designed for and adapted to LPG
- Bespoke ECU
- 100L LPG + 12L Petrol tank



TX4 LPG Taxi

Real World Emission Test Results



Less PM
which causes lung damage



Less NOx
which causes respiratory
problems



Less CO2
which leads to global warming

Real world tested LPG compared to diesel TX4

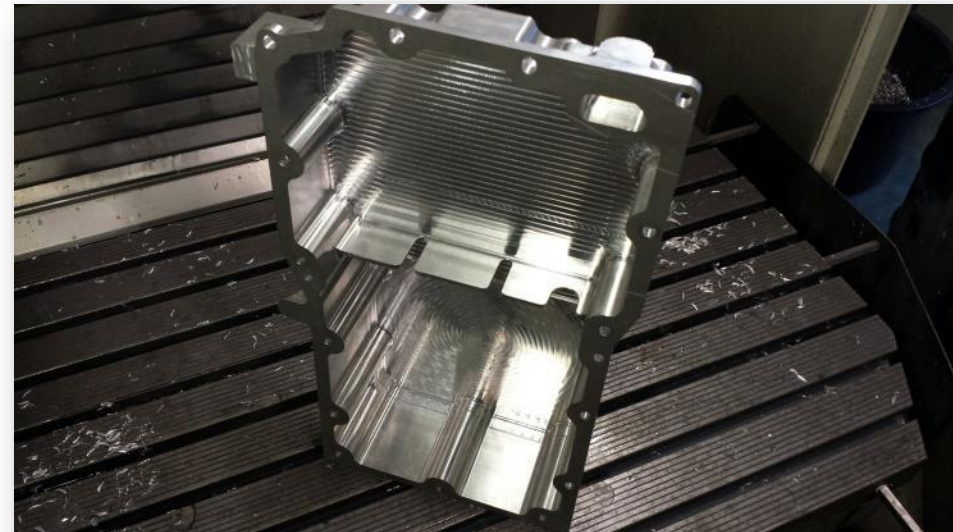
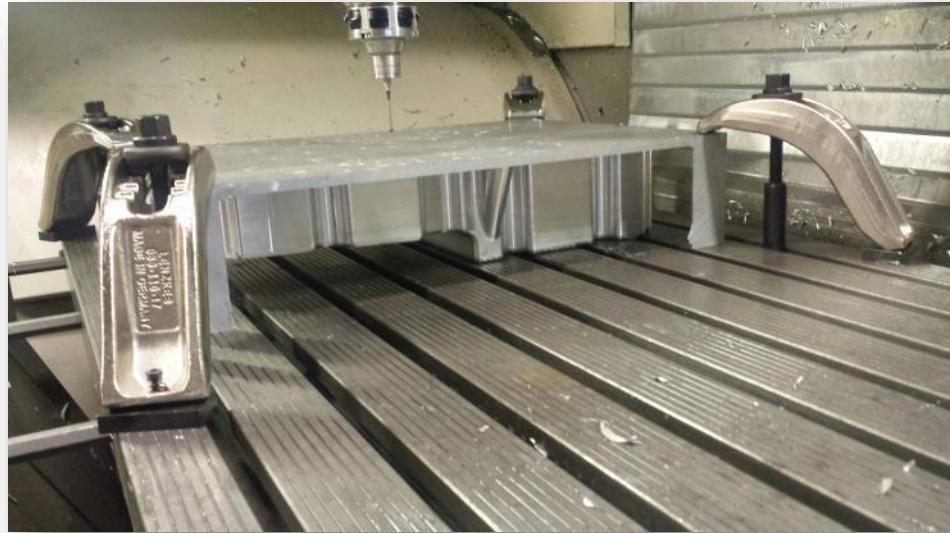
TX1 installation



TX2 installation



Adaption components



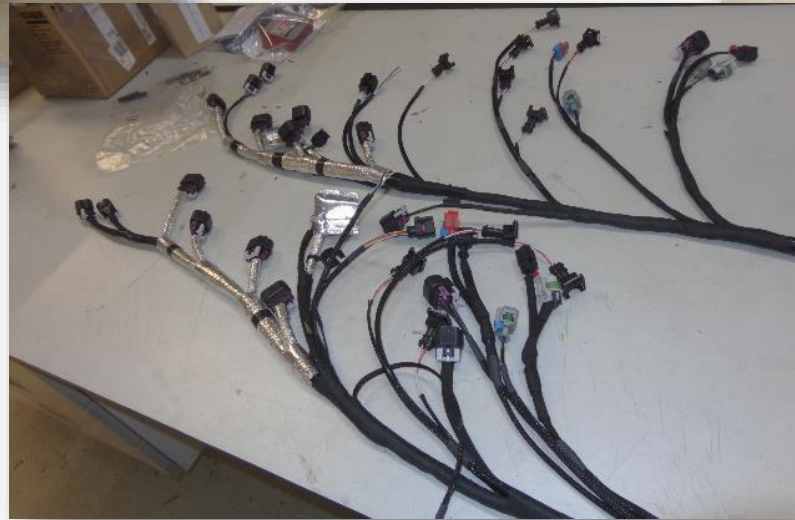
Main Engine Bay Component Parts



LPG ECU

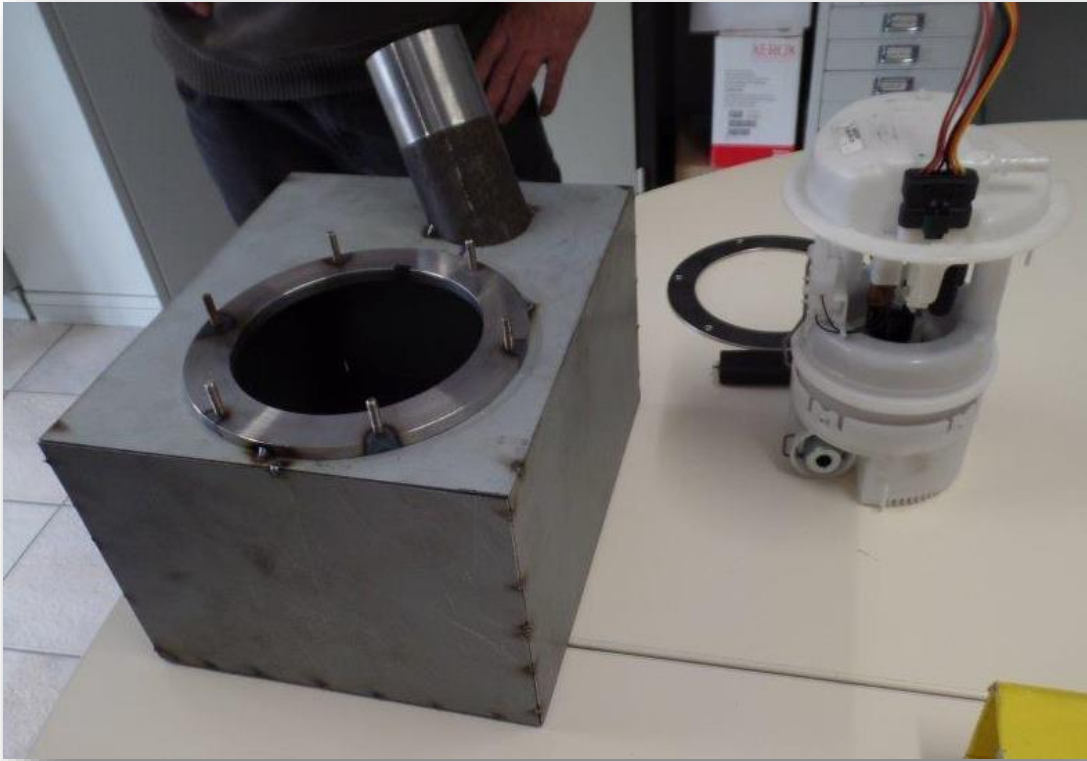


Engine ECU

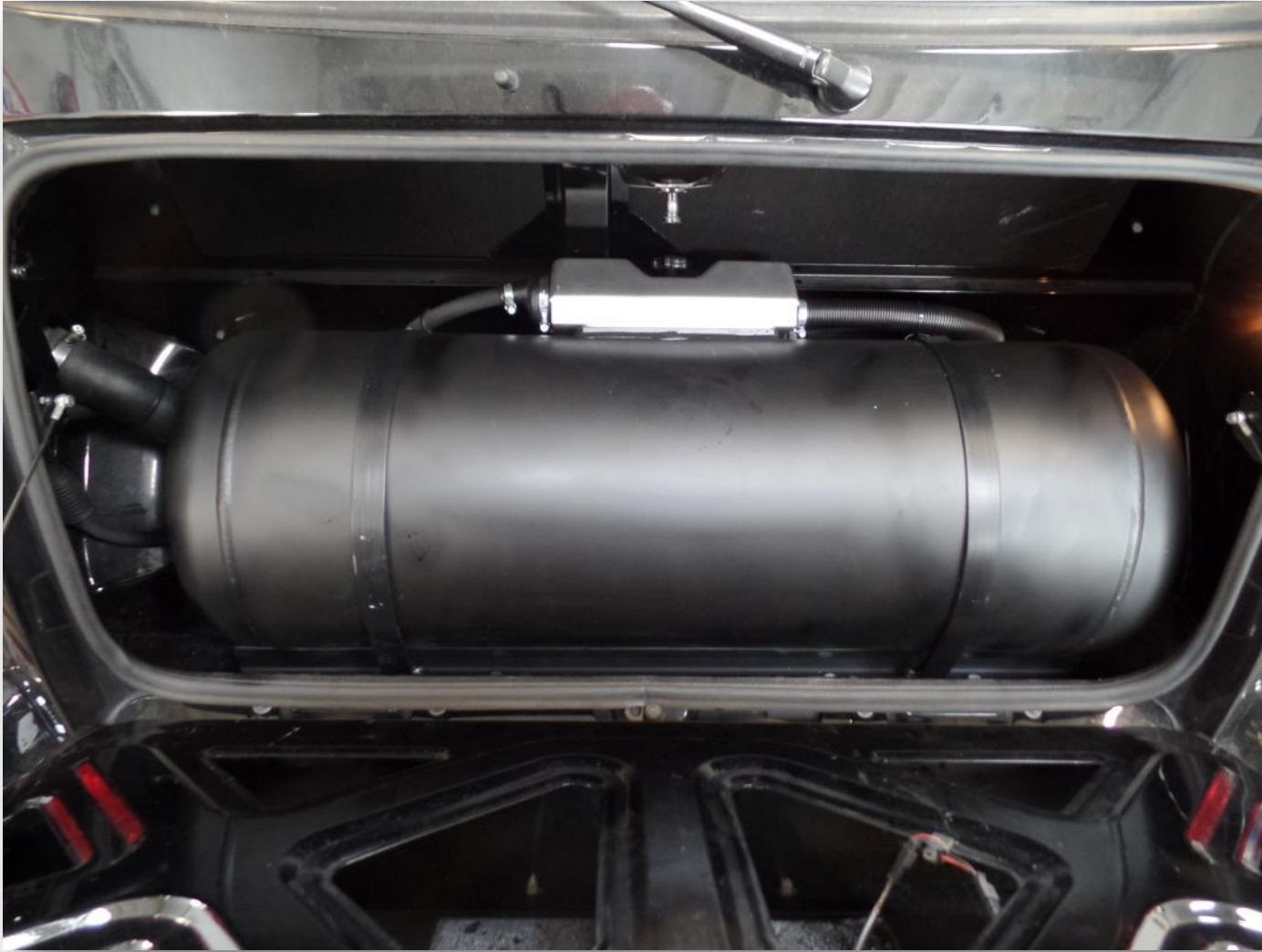


Wiring Loom

12L Petrol fuel tank



100L Autogas tank (300+ miles range)



Maintenance & warranty

Maintenance

- Every 12,500 miles engine & LPG service (oil & filter change)
- Every 25,000 miles, air filter change
- Every 50,000 miles, spark plugs

Warranty

- Engine warranty 1 year/30,000 miles
- LPG system 2 years/ 60,000 miles



London 10,000 mile Road Test



Taxi TX (1,2 & 4)

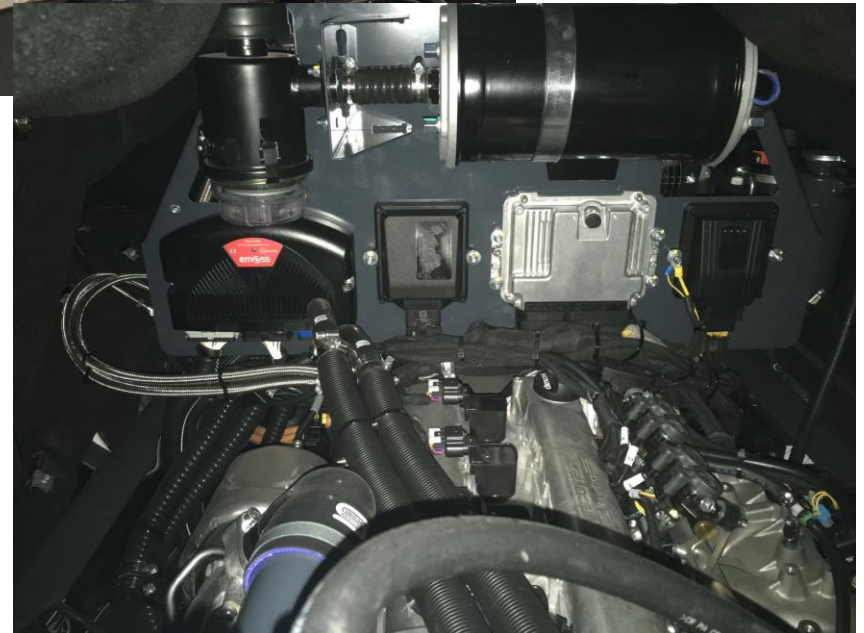
Result

- 100 Bhp
- Similar torque curve
- Quieter and less vibration
- Driveability improved
- Fuel cost saving

Emissions

- Euro 6
- Up to 98% less Particles
- Up to 80% less NOx
- CO2 similar





Refuse Freighter Under Development



LPG Autogas Summary

- Benefits the hard-pressed Fleet Operator
- Benefits the tax payer
- Benefits the environment & public alike
- Worldwide proven technology
- LCV's, taxis & private hire vehicles
- Existing supply infrastructure
- Bio-propane from 2017
- Immediate and most cost effective solution
- Supported by Dft & Defra

