LPG Vehicle Control Programme to address Diesel Vehicle Pollution in Hong Kong

RETA 5937: Reducing Vehicle Emissions
Regional Workshop on Transport Planning, Demand Management and Air Quality

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General Picture on HK Air Quality

Pollutants	Present Position
Lead (Pb)	✍ At low level
Sulphur dioxide (SO_2)	✍ At low level
Carbon monoxide (CO)	✍ At low level
Respirable Suspended Particulates (RSP)	✍ High concentrations at roadside
Nitrogen dioxide (NO_2)	✍ High concentrations at roadside
Ozone (O_3)	✍ On a rising trend

Causes of Air Pollution Problems

- **Street level air pollution**
  - **High RSP and NO2 levels caused by :**
- **High intensity of vehicle usage**
  - **271 vehicles per km of road in HK**
  - **33 vehicles per km of road in USA**
- **Heavy reliance on diesel vehicles**
  - **30% of vehicle population in HK**
  - **17% in Singapore**
  - **4% in USA**
- **Dense urban setting and tall buildings**
  - **poor dispersion at street level**

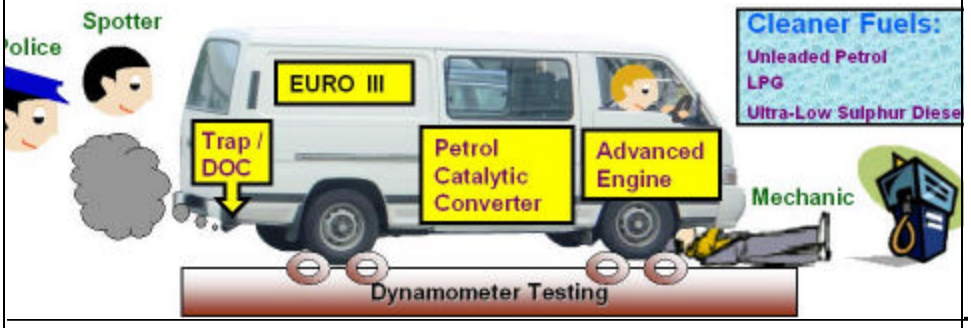
Heavy Reliance on Diesel Vehicles

- **All goods vehicles and buses are diesel powered**
- **30% of vehicle population but 58% of all vehicle mileage and 68% of vehicle fuel consumption in 2000**

Diesel Vehicles Accounted for

- **98% of vehicle particulate emissions**
- **100% of excessive smoky vehicles**
- **75% of vehicle NOx emissions**
- **Cause of record high Air Pollution Index**

Control Measures for Vehicle Emissions



Strategies:

- **Clean alternatives to diesel vehicles**
- **Stringent emission standards for new vehicles and fuel specification**
- **Strengthened emission inspection for in-use vehicles**
- **Strengthened enforcement against smoky vehicles**
- **Retrofitting pre-Euro vehicles with diesel catalyst / trap**
- **Promoting environmentally friendly driving and awareness of proper vehicles maintenance**

Introducing LPG Taxis and Light Buses

- **Phasing out diesel light buses and taxis can help reduce the air pollution in Hong Kong's urban areas.**
- **But, the trades worry about LPG vehicles' suitability for local operation and operation costs.**

Introducing LPG Taxis and Light Buses

Working in partnership with the trade by

- **running a 1-year trial to gather local operational data**
- **analysing the trial data objectively.**
- **discussing the trial findings thoroughly in a dedicated forum - a monitoring committee, which includes representatives of the trade and academics.**
- **addressing any issues identified in the trial.**
- **working out an introduction scheme based on the trial data.**
- **consulting the trade fully before making a decision.**

LPG Taxis

- **The major findings of the trial were:**
  - **LPG taxis could cope with the operational demands in Hong Kong.**
  - **An LPG taxi consumed 0.14 litre LPG per Km while diesel taxis consumed 0.11 litre of diesel per Km.**
  - **LPG taxis were smoke-free and quieter.**
  - **LPG taxis had strong support among their passengers.**
  - **An adequate LPG filling network and a sufficient vehicle maintenance service are essential to introducing LPG taxis.**

LPG Taxis

To help introduce LPG Taxis

- **Up to now, 600 plus vehicle mechanics have already had their skills upgraded for servicing LPG vehicles. More will be trained.**
- **Free land lease extension for existing stations to set up LPG filling facilities**
- **Nil land premium for setting up dedicated LPG filling stations.**
- **No fuel tax for motor LPG**

LPG Taxi Program (2000-2003)

- **HK$ 40,000 grant provided for each taxi owner to switch to LPG started August 2000**
- **Ban over 7 years old diesel taxi by 2003 (Proposal)**
- **Ban diesel taxi by 2006 (Proposal)**
- **Over 30 LPG stations by end of 2001**
  (over 40 by end of 2002)
- **Nearly 80% of the taxis fleet were replaced by LPG vehicles in just 18 months.**

LPG Light Buses

- **Working together with the trades to complete a 6-month trial of LPG light buses.**
- **As to LPG light buses, the major findings of the trial were:**
  - **LPG light buses were suitable for use in Hong Kong.**
  - **An LPG light bus travelled 2.6 km per litre of LPG whereas a diesel light bus travelled 4.85 km per litre of diesel.**

LPG Light Buses

The Administration's Proposal

- **A voluntary scheme**
- **A one-off grant of $60,000 or waiving the vehicle first registration tax to encourage the early replacement of diesel light buses by LPG vehicles.**
- **All newly registered diesel light buses have to be Euro III models.**

Additional Information

- **http://www.info.gov.hk/epd**
- **wcmok@epd.gov.hk**