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Natural Gas Vehicles Consulting
...Safety, Performance & Economics

Comprehensive NGV workshop - Presented by Dr Hien Ly

1. Workshop description

This **four-day** workshop aims to provide attendees with knowledge of a wide range of technical, commercial and regulatory issues of CNG. For example, it can help a government policy maker become better equipped to formulate government policy to regulate or support the industry. It can also help a fleet manager make better fleet and fuel purchase decisions, through knowledge of the issues and the sound commercial and technical practices that should be used.

The workshop is not designed as a “hands on” course for attendees wishing to conduct vehicle conversion, or to design, install and operate vehicles and refueling stations. For this technical capability the intending attendee should attend specific vocational workshops provided by technical training institutes and equipment manufacturers and suppliers.

The workshop can be conducted over a shorter period than four days, as required by the client. The three-day or two-day workshop presentation will be edited from the four-day version.

2. Workshop objective

To inform attendees about:

- Advantages of natural gas for vehicles
- How natural gas vehicles and refuelling systems work
- How natural gas vehicles are operated
- Available technologies and products
- Standards and regulations
- Vehicle certification
- Certification of technical staff
- Safety of high pressure fuel gas on board
- Economics of vehicles and fuel
- Market segments

- NGV's ability to continue compliance with increasingly stringent national vehicle exhaust emission regulations
- Necessary support and regulatory framework
- How to successfully start a CNG vehicle program

3. Who will benefit from the workshop?

- Government policy makers
- Government safety and regulatory authorities
- Clean fuels industry personnel
- Vehicle fleet (bus, taxi, etc) owners/operators
- NGV refueling infrastructure investors
- Energy company managers, supervisors, commercial and technical staff
- NGV industry equipment and service providers

4. Workshop topics

The course is generally divided into four sections spanning the entire spectrum of NGV issues. It can also be tailored to suit the local conditions of the trainees.

Section 1

- 1.1 Background
- 1.2 Standards and regulations
- 1.3 CNG refuelling stations

Section 2

- 2.1 CNG vehicle technologies
- 2.2 Gas engine technologies
- 2.3 New vehicle installation and existing vehicle conversions
- 2.4 CNG vehicle certification

Section 3

- 3.1 CNG vehicle exhaust emissions
- 3.2 Design and safety of vehicle workshops
- 3.3 Periodic inspection of vehicles
- 3.4 Economics of vehicles and refuelling stations

Section 4

- 4.1 CNG vehicle and refuelling station safety practice
- 4.2 Regulatory framework
- 4.3 Government support policy
- 4.4 How to start a CNG program
- 4.5 Workshop summary

5. About the presenter - Dr Hien Ly

Dr Hien Ly is a Sydney, Australia-based CNG expert with more than 30 years of CNG project and technical R&D experience in New Zealand and Australia. He has authored numerous reports and papers on CNG, and consulted large Australian CNG vehicle fleets on safety and management issues.

He has consulted in Australia and internationally on CNG projects including training courses, feasibility studies, government support policy, vehicle and refuelling station supply tender specification and evaluation, standards and regulations, research reports, safety training, safety incident investigations, and safety audits of facilities, and operational procedures.

He has presented papers at several national and international NGV conferences, as well as holding CNG training workshops in Australia and other countries.

Dr Ly has investigated a number of safety incidents in Australia, and is an avid observer of incidents in several countries for many years. He has access to CNG safety incident databases in several major countries.

Dr Ly has worked on all CNG-related standards in New Zealand and Australia since the early 1980s, and served in ISO CNG standard working groups since 1989, as a consultant to the International Association for Natural Gas Vehicles (IANGV).

Dr Ly is at present chairman of Standards Australia's committee AG 009 (CNG refuelling stations), and a member of Standards Australia's committees for gas cylinders, gas fuelled vehicles and gas quality

6. Who Will Benefit from Attending?

- Existing and intending CNG vehicle fleet owners and operators
- CNG equipment/system distributors and service providers
- CNG vehicle conversion and service workshops
- CNG vehicle approval agencies
- CNG vehicle inspectors and CNG cylinder inspectors
- Natural gas and power utilities
- Pressure equipment and workplace safety regulatory authorities
- National standards committees responsible for CNG standards
- Road transport authorities
- Civil defence and emergency services, the police and fire departments
- Risk assessors and auditors
- Technical colleges with CNG training courses
- Safety researchers
- Safety incident investigators

