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

Hien Ly's qualifications and gas utility experience

Updated 10 May 2014

Summary

Hien Ly holds the degrees of Bachelor of Engineering (BE, Mech.) and Doctor of Philosophy (PhD) in Engineering from the University of Auckland, New Zealand.

He has worked for more than 30 years for the largest gas utilities and as a consultant in New Zealand, Australia. He has also undertaken independent consulting work in Singapore, Malaysia, Thailand and Indonesia.

His work has included gas transmission and distribution network design, construction and operation, technical research and development, commercial development, and standards and regulations. His clients have included the energy utilities, international NGV (natural gas vehicle) industry bodies and Asian governments and companies.

1. Contact details

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2. Qualifications:

Bachelor of Mechanical Engineering (First Class Hons), University of Auckland, New Zealand.
Doctor of Philosophy in Engineering, University of Auckland, New Zealand.

3. Affiliations:

Member, Technical Committee of the International Association for Natural Gas Vehicles (IANGV).

Member, Standards Australia and ISO committees on **gas cylinders**, **natural gas vehicle installation standard**, **gas vehicle workshops**, and gas quality.

Chairman, Standards Australia Committee for **CNG refuelling stations**

4. CNG work history

New Zealand

Designed, installed and managed New Zealand's first CNG cylinder test station.

Developed New Zealand's first utility automated meter proving facility.

Produced a procedure for designing CNG compressor inlet pulsation dampers.

Participated in New Zealand standards committees on CNG.

Australia

Status review of CNG vehicle and refueling station network for Sydney (internal company report on technology and market research)

Designed and installed the Sydney network of CNG refuelling stations, both depot based and public, for the Australian Gas Light Company (AGL, Australia's largest energy utility).

Managed AGL's heavy duty gas engine research and development laboratory.

Managed AGL's CNG business including CNG cylinder import agency.

Feasibility study for CNG refueling network for the Australian Capital Territory (an internal company report).

Feasibility study for CNG refueling network for long distance trucks travelling between Adelaide City and Brisbane City (a confidential report for an energy utility client). (These are state capital cities with a road distance of 2000 km between them).

Managed heavy-duty gas engine development project under Federal Government funding program.

Conducted computer controlled CNG refuelling station R&D project under Federal Government funding program.

Participated in CNG refueling station tender projects and CNG bus purchase tender projects with large Australian bus fleets.

Consulted major Australian city bus fleets on CNG bus cylinder defects and safety issues (2003 and 2009).

Investigated CNG bus fire for the Western Australian Government in 2001.

Consulted Western Australia's Public Transport Authority on CNG bus fleet operations and **audited Transperth's CNG bus workshops** in 2007.

Produced Australian CNG bus type certification report for a major multinational OEM bus manufacturer (2007).

Conducted comprehensive CNG bus operations and risk assessment for a major Australian city bus fleet (500 CNG buses out of a total of 1000). This project included the review of the emergency response program and procedures for an underground CNG bus passenger terminal.

Conducted a safety audit of CNG bus workshops in South Australia for the South Australian Department of Energy and Infrastructure in 2010.

Produced safety procedures and operator training and assessment package for CNG bus refueling and fuel decanting for a major Australian city bus fleet in 2010.

Conducted due diligence of CNG bus refueling facilities for the acquisition of large bus refueling station networks in two state capital cities by a major Australian energy utility in 2011 and 2012.

Conducting due diligence and facility upgrade for a major client's acquisition of an Australian public refueling station in 2011.

Conducting due diligence and facility upgrade for a second network of CNG bus refueling stations for a major Australian energy utility in 2012.

Conducting a preliminary feasibility study of a large CNG compression and tube storage facility for transmission pipeline peak capacity augmentation, Melbourne, Australia, May 2012.

International

Provided CNG training for Singapore and Macau governments and companies.

CNG feasibility study for Singapore Government in 2001.

Conducted a one-week CNG training workshop for the Singapore Government and gas industry in Sydney, Australia in 2002.

Produced the entire set of national CNG standards (refueling stations, vehicles and vehicle workshops) for Singapore in 2004.

Produced **OIML** R139's certification test procedures for CNG and compressed hydrogen dispenser meters (**OIML** = International Organisation for Legal Metrology, Brussels, whose member countries including Australia have to comply with its metrological test requirements).

Conducted a one-week CNG training course for the Macau's Energy Sector Development Office (GDSE) in 2007.

Consulted Thailand's national petroleum company PTT on liquefied natural gas plant tender preparation and evaluation in 2007.

Produced and conducted a **comprehensive four-month CNG safety training** program at Sydney Institute of Technology in 2009 for The Government of Bangladesh, Petrobangla and RPGCL (Rupantarita Gas Company Ltd). The program contained sessions on **Safe CNG cylinder practices**.

Conducted a safety training workshop on CNG mother daughter system operation for the Asia Pacific NGV Association at the Second Vietnam NGV/CNG Forum in 2010.

Co-conducted a one-day CNG cylinder safety workshop at the ANGVA 2011 Conference in Beijing PRC in October 2011.

Conducted a one-week comprehensive CNG training workshop in Jakarta, Indonesia, in April 2012 for the state owned oil and gas company Pertamina.

Presented strategies for “Design and sizing safe and efficient CNG refueling stations” and “EPCC contracting for CNG refueling stations” at the CNG Infrastructure, Equipment and Conversion Seminar in Jakarta, Indonesia on 12-13 April 2012.

Performance, efficiency and safety review of a large CNG mother-daughter system comprising one mother station, eight daughter stations and 22 CNG tube trailers in Indonesia.

Produced CNG refueling station standards (including mother, daughter and tube trailers) for Pertamina, in July 2012.

Produced the ANGVA guidelines for CNG safety incident investigations for the Asia Pacific Natural Gas Vehicle Association, in July 2012.

Conducted a two-week comprehensive CNG training workshop in Sydney, Australia, for the Tanzania Petroleum Development Corporation, August - September 2013.

Preparation of a comprehensive, eight part set of standards for microbulk LNG facilities for Pertamina.

5. Recent publications

“The effects of natural gas composition variations on the operation, performance and exhaust emissions of natural gas powered vehicles”, IANGV report launched at the NGV 2002 conference, Washington DC. Available for purchase at www.iangv.org

“Gap analysis of international NGV standards and regulations”, IANGV reference document for the ISO/United Nations Standards and Regulations Harmonisation Roundtable, Geneva, January 2007. Available for purchase at www.iangv.org.

“CNG safety – A saving rather than a cost”, NGV Global online magazine, 2 July 2008.

“Learning and benefiting from NGV safety incidents”, NGV Global online magazine, 24 July 2008. Also appeared in The Gas Vehicle Report, August 2008.

“Enhancing the safety of CNG installations with quality designs and operating procedures”, NGV Global Magazine, 10 September 2008.

“Report for Brisbane Transport CNG operations risk assessment”, project report by GHD Pty Ltd, Australia, March 2009.

“Industry safety steps up a notch in Bangladesh with comprehensive training”, NGV Global online magazine, 16 December 2009. (A report on the four month CNG training program for Bangladesh by Dr Hien Ly at the Sydney Institute of Technology, Sydney, Australia).

“Brisbane Transport Training and Assessment Package – CNG Bus Refuelling”, Brisbane City Council, 2010.

“Brisbane Transport Training and Assessment Package – CNG Bus Decanting”, Brisbane City Council, 2010.

“Overview of CNG vehicle safety”, NGV 2010, The International Natural Gas Vehicle Conference and Exhibition, Rome, June 2010.

“Closing the safety loop secures NGV fleet investment”, NGV Global 9 March 2011.

“Keeping up the good safety record of CNG cylinders”, NGV Global 3 August 2011. Also appeared in Asian NGV Communications, September 2011.

“Design and Safety of CNG Vehicle Workshops”, ANGVA 2011, the ANGVA International Conference and Exhibition, Beijing, October 2011.

“CNG cylinder selection, installation, operation and maintenance”, CNG Cylinder Safety Workshop at ANGVA 2011 Conference and Exhibition, Beijing, October 2011.

“CNG cylinders – Periodic recertification/inspection”, CNG Cylinder Safety Workshop at ANGVA 2011 Conference and Exhibition, Beijing, October 2011.

“Designing and sizing safe and efficient CNG refueling stations”, CNG Infrastructure, Equipment and Conversion Seminar, 12-13 April 2012, Jakarta, Indonesia.

“EPCC Contracting for CNG refueling stations”, CNG Infrastructure, Equipment and Conversion Seminar, 12-13 April 2012, Jakarta, Indonesia.

“Report on the inspection and study of the safety, operation and maintenance of a CNG mother station, daughter stations and CNG storage trailers”, 15 June 2012, for IEV Energy Sdn Bhd, Malaysia.

“ANGVA CNG safety incident investigation guidelines”, 17 July 2012, for the Asia Pacific Natural Gas Vehicle Association (ANGVA), Kuala Lumpur, Malaysia.

“Pertamina standard for CNG refueling stations”, July 2012 for Pertamina, the state owned Indonesian oil and gas company, Jakarta.

“Pertamina standard for CNG refueling station safety and maintenance”, July 2012 for Pertamina, the state owned Indonesian oil and gas company, Jakarta.