Advanced Fuels Technology Pty Ltd

ABN. 58 079 473
15 Garden Drive, Tullamarine, Victoria, Australia 3043
P.O. Box 1112, Tullamarine, Victoria, Australia 3043
Phone: +61 3 9338 1722 Fax: +61 3 9338 1599

13 July 2009

Advanced Fuels Technology Submission to:

The Select Committee on Fuel & Energy

Inquiry into Fuel & Energy

Natural Gas is a clean, low carbon, gaseous fuel, which Australia produces in abundance and there are over 9 million Natural Gas Vehicles (NGVs) currently operating around the world.

Increased use of Natural Gas in the Transport Sector can contribute to critical aspects of Australia's energy & environmental policy objectives:

- **Price Stability** – Often underrated but becoming more critical. Because natural gas pricing in Australia is not subject to crude oil pricing fluctuations it gives us more control over fuel transport prices.

- **Climate Change Policy and Greenhouse Gas Emission Reduction -**
  The use of Natural Gas (CNG & LNG) as a fuel for automotive and stationary energy delivers an immediate reduction in greenhouse gas (GHG) emissions compared to conventional energy sources; Reductions are in the order of 10-20% relative to diesel, 10 – 30% relative to petrol on a life cycle basis.

- **Energy Security** – Australia is an exporter of Natural Gas but remains a growing net importer of oil and petrol. Our reliance on imports also leaves our economy vulnerable to outside influences

- **Economical Transport Fuel Option for Australian Consumers** – CNG & LNG offer lower fuel costs for Australian motorists & Transport Operators.

- **National Environment Protection Measure (NEPM) for Air Quality –**
  As an automotive fuel, CNG & LNG pose a lower health risk from particulates and air toxics than petrol or diesel. Latest technology Natural Gas vehicles produce substantially reduced tail-pipe emissions of CO, particulates and Nox/Sox. In addition, CNG and LNG powered commercial vehicles are up to 50% quieter than the equivalent diesel vehicles

- **Renewable – 'Methane'** can be produced from organic and waste sources (landfill, agricultural waste…). This also results in additional material greenhouse gas reductions (i.e. preventing methane that would otherwise escape to the atmosphere). Biomethane can effectively produce a 'carbon-neutral' transport fuel for Australia.

- **Pathway to hydrogen vehicles –** natural gas is being used worldwide as a 'pathway' fuel due to the similarities (i.e. gaseous fuel) and the high hydrogen content in methane.

Advanced Fuels Technology Pty Ltd

ABN. 58 079 473
15 Garden Drive, Tullamarine, Victoria, Australia 3043
P.O. Box 1112, Tullamarine, Victoria, Australia 3043
Phone: +61 3 9338 1722 Fax: +61 3 9338 1599

Emissions Reductions:

Compressed Natural Gas (CNG) reduces carbon emissions, it also reduces CO, CO2 & NOx emissions as compared to equivalent LPG or Petrol fuelled cars.

Table 3 summarizes the emission levels of the Civic GX in comparison with the current ULEV emission standards (LEV-I).

Table 3 – Emission Levels of Civic GX
In Comparison with ULEV (LEV-I) Emission Standards

Emissions	Civic GX
CO	10%
NOx	10%
NMOG	10%
SFTP (NMHC+NOx)	10%
Cold CO	5%
Air Toxic*	3%
Evaporative	0%
In-Use Total ROG	3%

*:in comparison with a gasoline-LEV

Data provided by Honda for Honda Civic GX.
The current model Honda Civic is the cleanest internal combustion powered production vehicle in the world (status held since 2000). In California, the exhaust emissions are cleaner than the air going in! It has been awarded (Advanced Technology Partial-Zero-Emissions Vehicle (AT PZEV) status by Californian EPA.

A CNG bi-fuel Ford Territory in Melbourne.

Potential Federal initiatives:

1. Transport Fuels Excise Policy – Re-think:

Natural Gas currently enjoys excise free status but, as part of overall transport fuels excise policy, Natural Gas will have an excise from 2011, to be applied as follows:

- For CNG from 2011 at 3.8c/m3, rising to 19c/m3 in 2015 (based on petrol excise at 38c/l).
- For LNG from 2011 at 2.5c/m3, rising to 12.5c/m3 in 2015 (based on petrol excise at 38c/l)

The introduction of an excise will slow & reduce the uptake of NGVs - Given the micro & macro economic, health, environmental and greenhouse benefits that result from the increased use of natural gas, consideration should be made to reduce and/or postpone the introduction of the excise.

2. Development of a private CNG vehicle Car Conversion Grants Scheme:

In August 2006, the Federal Government announced the implementation of a grants scheme for private vehicle owners, with grants of $2,000 per vehicle for new and used vehicles converted to LPG and $1,000 for vehicles fitted with LPG at the point of manufacture.

This initiative has proven to be successful and consideration should be given to create a similar scheme for CNG vehicles for private & commercial vehicle owners. Given the lower emissions from Natural Gas Vehicles the federal grant scheme should be in excess of the $2000 for LPG conversions.

Advanced Fuels Technology Pty Ltd

ABN. 58 079 473
15 Garden Drive, Tullamarine, Victoria, Australia 3043
P.O. Box 1112, Tullamarine, Victoria, Australia 3043
Phone: +61 3 9338 1722 Fax: +61 3 9338 1599

3. Consideration to development of a Conversion Grants scheme for Commercial Vehicles:

Consideration should be given to developing a grants scheme for commercial customers to convert to the use of NGVs (CNG or LNG powered vehicles). To qualify the technology being applied must meet pre-determined emissions targets. To quantify the funding required and to ensure transparency, a fixed grant structure could be proposed, such as:

- Vehicles with up to 5T Gross Vehicle Mass: $5000
- Vehicles with Gross Vehicle Mass between 5 – 15T: $10,000
- Vehicles with Gross Vehicle Mass between 15 – 30T: $20,000
- Vehicles with Gross Vehicle Mass over 30T: $30,000

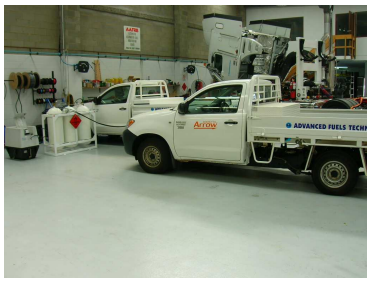




All of the above are CNG or LNG vehicles operating on Australian roads.

4. Development of a fund to promote the use of home CNG refuelling in order to facilitate the adoption of low emissions technology by Western Australians in their homes:

There is a growing interest in the adoption of CNG by private users but the lack of infrastructure and public refuelling and the capital cot of home refuellers are a real barrier to the industry's growth Prices for home refuellers range from $6000 to $10,000 and can refuel cars overnight in a period between 4 – 10 hours. The Gas & Electrical supply are via the standard connections provided by the Energy Supply companies.


The above refuellers are all in operation & available in Australia.

Advanced Fuels Technology Pty Ltd
ABN. 58 079 473
15 Garden Drive, Tullamarine, Victoria, Australia 3043
P.O. Box 1112, Tullamarine, Victoria, Australia 3043
Phone: +61 3 9338 1722 Fax: +61 3 9338 1599

5. Development of an Infrastructure Grant scheme to promote the building of CNG & LNG stations (Depot or Public refuelling).

An infrastructure grant scheme whereby 25% of the capital (to a maximum grant of $100,000) could be provided to private companies to promote investment. If $30 million was allocated to the fund (50% CNG & 50% LNG), this could enable and accelerate the development of up to 100 natural gas refuelling stations in Western Australia.

Council CNG station - SA

Forklift CNG station

1 of 150 Petronas Public CNG Station in KL

LNG refueller in Perth WA

LNG refueller in Perth

6. Consideration to Vehicle OEMs in regard to axle weight and length limits.

NGVs are often heavier and longer than the equivalent diesel or petrol fuelled vehicles. This can be very limiting given the arduous duty cycles required of commercial vehicles in the Australian environment. As such, consideration should be given to relax and/or review the limits in order to facilitate the increased use of low emission NGVs.

7. Government Fleet Adoption

Mandates requiring the Government to adopt low emission natural gas vehicles within its fleet.

Prepared by:

Sean D Blythe
CEO – Advanced Fuels Technology
Vice President – Asia Pacific Natural Gas Vehicles Association (ANGVA)