



Australian Government

Department of the Environment and Heritage



Fuel Quality Standards Act 2000

CLEAN FUELS BULLETIN

May 2004

WORLD'S FIRST DYNAMOMETER-BASED ROADSIDE EMISSIONS PROGRAM

In July 2002, the Australian Government agreed to fund a project jointly initiated by the then National Road Transport Commission (now National Transport Commission) and EPA Victoria to develop an 'Eco-maintenance' training program for diesel mechanics aimed at improving the emissions performance of diesel vehicles. Earlier research had identified a strong link between good maintenance and good emissions performance. The project was funded from the Commonwealth's Diesel National Environment Protection Measure (NEPM) program under *Measures for a Better Environment*.

The original proposal was supplemented to allow a random roadside and fleet based emissions testing program, bringing total Commonwealth funding for the project to over \$750,000. The roadside program was intended to broaden the relevance of Eco-maintenance training beyond mechanics to include truck owners, operators and drivers.

The project piloted the first dynamometer based roadside emissions testing program in the world. Testing and training was conducted at nine locations in Victoria between June and August 2003. Over 130 diesel vehicles were tested for oxides of nitrogen, particulate matter and exhaust opacity using the Diesel NEPM DT80 test cycle.

The project confirmed findings from similar studies conducted by the NSW RTA that a small number of highly polluting vehicles are responsible for a disproportionately high percentage of total emissions. The study also found vehicles serviced by the owner were likely to have higher particulate emissions than vehicles serviced by a mechanic. This provided valuable information for targeting future Eco-maintenance training.

The final stage of the project, now nearing completion, will provide the necessary materials for any other jurisdiction to undertake a testing and training program. Importantly, feedback from the pilot training program has enabled a comprehensive identification of training needs in the industry. New competency standards covering environmental issues will be incorporated in the



TAFE training of diesel mechanics and the Eco-maintenance Program will provide the basis of the learning materials needed to deliver the training.

DEVELOPMENT OF STANDARDS – COMPRESSED NATURAL GAS

In November 2003, the Department of the Environment and Heritage released a discussion paper on the case for a **Compressed Natural Gas (CNG)** standard. Eight submissions were received, which were generally supportive of the discussion paper's recommendation not to proceed with a fuel quality standard at this stage. The Fuel Standards Consultative Committee (FSCC) will consider CNG at its next meeting on 16 June 2004. The FSCC will then make a recommendation to the Minister, the Hon. Dr David Kemp MP.

DIESOHOL DISCUSSION PAPER

The Australian Government has made a commitment to develop fuel quality standards for LPG, ethanol, CNG, biodiesel and 'other relevant transport fuels'. Diesohol – a blend of diesel and alcohol – is defined in the *Fuel Quality Standards Regulations 2001* as a 'blend primarily comprising diesel and an alcohol'.

Also known as E-diesel, M-diesel and Oxy-diesel, the fuel is used in compression ignition engines as an alternative diesel fuel. The focus in Australia has been on hydrous ethanol blends formulated using an emulsifier developed by the Australian company Apace Research. An alternative technology uses anhydrous ethanol and an additive.

The discussion paper does not present an Australian Government position on the development of a standard for diesohol. Rather, the aim is to generate discussion around technical issues associated with the use of diesohol as a transport fuel, and to suggest options for regulating its quality.

The paper's release on 27 March 2004 has been timed to coincide with the National Alternative Fuels Summit, which is being held in Sydney. Stakeholders are invited to comment on the issues raised in the paper by **7 July 2004**.

The document is available electronically on the Department's website at <http://www.deh.gov.au/atmosphere/cleaner-fuels/alternative/index.html>. Comments received will be treated as public information (unless marked as 'Confidential') and will be posted in a web forum on the website. Comments may be used to inform future policy decisions on the management of diesohol through the *Fuel Quality Standards Act 2000*.

Enquiries regarding the Discussion Paper should be directed to Mr Peter Hemphill, Clean Fuels and Vehicles, telephone (02) 6274 1643.

CETANE DISCUSSION PAPER

On 8 April 2004 the Department of the Environment and Heritage released the discussion paper: *Measuring Cetane Number: Options for Diesel and Alternative Diesel Fuels*, for stakeholder comment. The closing date for submissions was 30 April 2004.

There is a general lack of infrastructure and experience in Australia concerning testing cetane number for diesel and alternative diesel fuels (biodiesel, diesohol and diesel-water emulsions). The paper canvassed stakeholder views on options to balance this apparent lack of infrastructure and experience with the need for both industry and government to test this fuel quality parameter. The objectives of the paper were to:

- identify any Australian testing facilities and infrastructure for determining the cetane number of diesel and diesel alternatives;
- identify alternatives to traditional cetane number testing methods such as ignition quality testing technology or the establishment of 'cetane indices' for alternative diesel fuels; and
- seek comment from stakeholders on appropriate methods of managing cetane as a fuel quality parameter.

These issues were discussed further in terms of their impacts on the regulation of cetane properties of diesel and alternative diesel fuels and the implications for stakeholders. The paper sought comment on a range of specific issues, including an appropriate means of determining cetane number of Australian diesel-based fuels or a surrogate in place of the direct measurement of cetane number. Responses to this included use of a modified engine, developing a cetane index for alternative fuels, using a traditional cetane engine and new Ignition Quality Test (IQT) technology.

Responses to the paper were received from a wide range of stakeholders. Submissions have been posted on the DEH website at (<http://www.deh.gov.au/atmosphere/cleaner-fuels/cetane.html>).

MONITORING COMPLIANCE AND ENFORCEMENT

National standards for petrol and diesel came into force on 1 January 2002. These were followed by standards for biodiesel in September 2003 and Autogas in March 2004. The standards are being implemented under the *Fuel Quality Standards Act 2000* (the Act). For the 2003/04 financial year, the Government has committed over \$1 million to a monitoring compliance and enforcement program for the Act

Over 800 petrol and diesel samples have been scheduled for the 2003/04 financial year. By the end of June 2004, over 2000 samples will have been taken since the sampling program commenced in April 2002. While the actual results of testing cannot be publicly released, overall, test results indicate a high level of compliance with only 2% of all samples tested as non-compliant.

The main issue in relation to petrol appears to be lower than permitted octane levels, possibly from the addition of substances to extend the fuel. Test results for a number of diesel samples have indicated adulteration, apparently with used lube oil or other high sulfur oils. Samples scheduled as a result of many compliance incident reports received by the Department often test as compliant with the national standards. It is suspected that many operability issues arise from dirt in service station tanks that may be stirred up after a fuel tanker has refilled tanks. This sediment will often have settled by the time inspectors reach sites to take a sample.

The 2004 calendar year has seen three reports in the press relating to issues with fuel quality which the Department has been specifically investigating:

- **Diesel supplies in Rockhampton**

Reports from around the Rockhampton area claimed that leaking fuel pump seals were associated with the diesel supply. BP investigated this issue, in light of a previous, similar problem associated with low sulfur fuels but was not able to ascertain the cause of the problem. Fuel quality inspectors visited sites in Rockhampton during April. Test results from samples taken, however, have not highlighted any fuel quality problems with the fuel.

- **Ethanol blended petrol supplied in Sydney**

It has also been reported in the media that service stations in Sydney are supplying ethanol blends above the 10% limit and are not complying with the new requirements for labelling fuel dispensers. The *Fuel Quality Information Standard (Ethanol) Determination 2003* came into force on 1 February 2004 and suppliers must label fuel dispensers advising consumers that the fuel contains ethanol and at what level, plus some additional consumer information.

Since the 10% ethanol limit was introduced on 1 July 2003 only two petrol samples taken in Sydney have contained ethanol above 10%. The ethanol level in these two samples is around the 12% level. Monitoring of ethanol levels and compliance with the information standard is included as part of the general petrol monitoring program. Cases where breaches of either the ethanol standard or the information standard are detected are referred to the Director of Public Prosecutions (DPP).

- **Premium unleaded petrol supplied in Tasmania**

Inspectors have responded to a number of compliance incident reports relating to premium unleaded petrol (PULP) in Tasmania. Test results from the samples against regulated fuel parameters, however, have not indicated any non-compliance. We are continuing to monitor the situation.

Next year

Planning is under way for the 2004/05 financial year. While some biodiesel monitoring has been undertaken, sample numbers will be increased as more commercial suppliers enter the market. Development of procedures to sample LPG will also be finalised with a view to commencing a sampling program for Autogas.

CONSULTANCY PROJECT: USE OF LEADED PETROL AND SPECIALIST PETROLEUM-BASED UNLEADED RACING FUEL IN MOTOR AND WATER SPORTS

This project will examine the type of fuels that will be required for motor and water sport applications in Australia in light of the expiration on 30 June 2005 of the approvals currently permitting the use of leaded petrol and specialist-petroleum based unleaded racing fuel. The aim is to provide the Government with a better understanding of the technical requirements of motor and water sport (or specialist) vehicles that currently use these fuels. This will assist deliberations on the best approach to managing the supply of leaded petrol and unleaded racing fuel after 30 June 2005.

In particular, the Consultant will be asked to address:

- the current and projected use of both leaded petrol and unleaded racing fuels in Australia;
- the type of motor/water sport (or specialist) vehicles that use these types of fuels; and
- the circumstances and events that require the use of these types of fuels.

The Consultant may also make recommendations in relation to the Leaded Fuel Passbook arrangements, if the supply of leaded fuel is to continue beyond June 2005.

Key stakeholders in the motor racing and water sport industries, including fuel suppliers and other interested parties, will be consulted in the course of the enquiry.

The Department is currently assessing tenders and expects to announce the successful consultant in July.

Enquiries regarding this project should be directed to Ms Susan Levett, Clean Fuels and Vehicles Section, Department of the Environment and Heritage, GPO Box 787, Canberra ACT 2601, or emailed to fuel.quality@deh.gov.au.

Approvals Granted under the Act

Since the March 2004 Clean Fuels Bulletin, and after consultation with the Fuel Standards Consultative Committee, the Minister has granted three new approvals under Section 13 of the Fuel Quality Standards Act 2000. These are tabulated below.

Name of Approval Holder	Period of Operation	Approved Variation of Fuel Standard
VPW Australia	12 March 2004 – 30 June 2005	Variation of the Fuel Standard (Petrol) Determination 2001 to permit the supply of 2 specialist racing fuels. Variation of the MTBE parameter.
VP Racing Fuels Pty Ltd	12 March 2004 – 30 June 2005	Variation of the Fuel Standard (Petrol) Determination 2001 to permit the supply of 5 specialist racing fuels. Variation of the Aromatics, DIPE and MTBE parameters.
Elf Lubricants Australia Pty Ltd	12 March 2004 – 30 June 2005	Variation of the Fuel Standard (Petrol) Determination 22001 to permit the supply of 10 specialist racing fuels. Variation of the Aromatics, Oxygen, DIPE, MTBE and Olefins parameters.

CONTACT DETAILS

For more information about any of the items in this Bulletin, please contact:

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