

FUEL QUALITY



Operation of the *Fuel Quality Standards Act 2000*

This annual report is prepared in accordance with section 71 of the *Fuel Quality Standards Act 2000* (the FQS Act). It covers the operation of the Act from 1 July 2008 to 30 June 2009.

Purpose of the Act

The purpose of the FQS Act is to regulate the quality of fuel in Australia, to:

- reduce the level of pollutants and emissions arising from the use of fuel, that may cause environmental and health problems
- facilitate the adoption of better engine and emission control technology, and allow for more effective operation of engines
- ensure that appropriate information about fuel is provided when it is supplied.

The Fuel Quality Standards Regulations 2001 (the FQS Regulations) cover: the regulation of fuel and fuel additives; the operations of the Fuel Standards Consultative Committee; the publication of notices about entries in the Register of Prohibited Fuel Additives; enforcement; and record keeping and reporting obligations.

Fuel quality standards

Fuel Standard Determinations set specific fuel quality standards for petrol, automotive diesel, biodiesel and autogas (liquefied petroleum gas or LPG). The determinations specify standards for a range of parameters, which address both environmental and operational performance.

The standards for petrol and diesel have been progressively tightened, since they were first introduced in 2002. The regulated levels of sulphur in diesel were further reduced during the year to 10 milligrams per kilogram, from 1 January 2009.

The Fuel Standard (Automotive Diesel) Determination 2001 was amended to allow up to 5 per cent biodiesel in diesel, as the first step in managing biodiesel blends under the FQS Act. Blends higher than 5 per cent are being managed through the section 13 approvals process.

During the year 14 approvals were granted for the supply of diesel with biodiesel content above 5 per cent, and up to 20 per cent.

Work also commenced on a review of the autogas standard to ensure that the standard is adequate for current and emerging LPG vehicle technology. A discussion paper was prepared for public consultation and released in September 2009. A copy of the paper is available on the department's website at: www.environment.gov.au/atmosphere/fuelquality/index.html.

Oil Burn Systems

A discussion paper Management of Diesel Oil Burn Systems, was released in February 2008, seeking technical information from stakeholders on proposed amendments to the diesel standard, to accommodate the use of oil burn systems under the FQS Act. Only four submissions were received, which did not provide the required information. Through the year the department has been considering the issue based on information on management of these systems in Europe and the United States, to determine the best approach for Australia. A notice advising stakeholders of the outcome will be published on the department's website.

Future fuel standards – research and consultation

Diesohol

Diesohol is a blend of 85–90 per cent automotive diesel, 10–15 per cent alcohol (usually ethanol, sometimes methanol) and a blending agent. Like diesel, it is used in compression ignition engines, however, vehicle engines must be modified as the addition of alcohol changes the properties of the fuel.

There is, however, currently no fuel standard controlling the quality of diesohol supplied in Australia. Public and industry consultation has indicated that it would not be desirable to set a fuel standard for diesohol at this time. Due to safety concerns, diesohol is best suited to niche markets, such as centrally re-fuelled fleets with modified engines and fit-for-purpose storage and handling infrastructure.

During the year, diesohol was removed from the Regulations as a fuel in its own right. Diesohol can now only be supplied under a section 13 approval, to vary the automotive diesel fuel standard. The approval will specify conditions relating to the way diesohol is supplied to address safety issues and mis-fuelling concerns resulting from the alcohol content of the fuel.

Health impacts of using ethanol blend fuels

In 2007 the department commissioned a \$3.9 million study by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Orbital Australia, to determine the health impacts of the use of up to 10 per cent ethanol blended with petrol. Previous emissions studies have

focused on cold climates and do not apply to Australian conditions. Stakeholders were consulted on the methodology for the study.

On 15 August 2008, the department released the results of the study. Key findings include:

- Inclusion of 10 per cent ethanol in petrol (E10) can reduce emissions of some pollutants but increases emissions of other pollutants.
- Although the study estimated marginal health cost savings, overall the benefits of E10 appear to be marginal and will reduce over time, as new vehicles with advanced emission technology replace older vehicles.

The study is titled: Evaluating the Health Impacts of Ethanol Blend Petrol, and is available at www.environment.gov.au/atmosphere/fuelquality/index.html. The results will be used in conjunction with other studies, such as the vehicle compatibility study, to inform future ethanol policy decisions.

Setting standards for biodiesel blends

Management arrangements for diesel/biodiesel blends were established in 2008–09. To meet the objectives of the FQS Act, and to ensure the quality of diesel fuel available to Australian consumers, an amendment to the diesel standard was implemented to allow the inclusion of up to 5 per cent biodiesel. Minor technical amendments were also made to the diesel and biodiesel standards, to allow for the 5 per cent biodiesel and to update the standards.

In the short term where the use of blends with more than 5 per cent biodiesel is appropriate, supplies are being managed through the section 13 approvals process. In the longer term, broader consideration of the use of higher blends under Australian conditions will be undertaken. The need for a B20 (diesel containing 20 per cent biodiesel) fuel standard is currently being considered, based on the management of these blends in Europe and the United States.

Biodiesel demonstration trial

A biodiesel demonstration trial, managed by Parks Australia, was conducted in Booderee National Park. After some delays, a suitable supplier of fuel storage infrastructure and diesel/biodiesel (B5) blended fuel, was located. Parks Australia commenced the use of B5 fuel in March 2008. The trial was completed on 30 June 2009 and successfully demonstrated the supply and storage of B5 fuel and its use in Park management vehicles, for a variety of purposes, on a day-to-day basis. There were no notable service or operability issues attributed to the use of the B5 fuel.

Amendments to the *Fuel Quality Standards Act 2000*

A Bill to amend the FQS Act to implement a number of recommendations from the first statutory review of the Act, was introduced into Parliament on 18 March 2009. The amendments also addressed a number of separate issues that had arisen through the day-to-day operation of the Act. The next statutory review of the Act is due to commence in the second half of 2009.

Amendments to the Regulations were also implemented, as a result of recommendations from the statutory review and to implement a new cost recovery framework for section 13 application fees.

Fuel Standards Consultative Committee

Section 24 of the FQS Act establishes the Fuel Standards Consultative Committee as a formal consultation mechanism. The committee is required to include one representative from each state and territory and the Australian Government. It must also include: at least one person representing fuel producers; one representing a non-government body with an interest in the protection of the environment; and one representing the interests of consumers. The minister may also appoint other members to the committee, which in 2008–09 included representatives from the motor vehicle manufacturing industry, independent fuel importers and suppliers, the alternative and renewable fuels industry and the trucking industry.

Table 1 lists members of the committee during 2008–09.

Under section 24A, the minister must consult the committee before:

- granting an approval
- making a fuel quality standard
- making a fuel quality information standard
- deciding whether to enter a fuel additive to, or remove a fuel additive from, the Register of Prohibited Fuel Additives, and
- preparing guidelines for more stringent fuel standards.

Under section 13 of the FQS Act, the committee also provides advice on applications to vary fuel standards, including recommendations on the conditions to be applied. In 2008–09, the committee considered and made recommendations on 24 new applications under section 13 (see Table 2).

Table 1: Membership of the FSCC 2008–09

| <i>First Name</i> | <i>Surname</i> | <i>Representing</i> | <i>Start Date</i> | <i>Finish Date</i> |
|-------------------|----------------|--|-------------------|--------------------|
| Paul | Barrett | Fuel producers | 16/04/07 | 16/04/10 |
| John | Bortolussi | Trucking industry | 16/04/07 | 16/04/10 |
| David | Bowman | Environment non-government organisation | 16/04/07 | 16/04/10 |
| Bruce | Harrison | Alternative fuels industry | 04/01/08 | 01/01/11 |
| James | Hurnall | Automotive industry | 30/03/08 | 30/03/11 |
| Bob | Hyde | Tasmanian Government | 27/11/06 | 27/11/09 |
| Paul | Kesby | Acting Chair Australian Government Department of the Environment, Water, Heritage and the Arts | 01/12/08 | 01/12/11 |
| Geoff | Latimer | Victorian Government | 16/04/07 | 19/09/08 |
| Mike | McCullagh | Independent fuel producers | 16/04/07 | 16/04/10 |
| Scott | McDowall | Queensland Government | 16/04/07 | 16/04/10 |
| Craig | Newland | Consumer interests | 17/06/08 | 20/09/11 |
| Kelly | Pearce | Chair Australian Government Department of the Environment, Water, Heritage and the Arts | 04/01/08 | 01/12/08 |
| David | Power | ACT Government | 09/10/06 | 09/10/09 |
| Jon | Real | Australian Government Department of Infrastructure, Transport, Regional Development and Local Government | 16/04/07 | 16/04/10 |
| Nigel | Routh | NSW Government | 16/04/07 | 28/01/09 |
| Steven | Sanderson | Northern Territory Government | 16/04/07 | 19/11/08 |
| Kelvyn | Steer | South Australian Government | 09/10/06 | 09/10/09 |
| John | Sutton | Western Australian Government | 16/04/07 | 16/04/10 |
| Marie | Taylor | Australian Government Department of Resources, Energy and Tourism | 16/04/07 | 04/05/09 |

Table 2: Approvals granted in 2008–09

| <i>Name of Approval Holder</i> | <i>Period of Operation</i> | | <i>Approved Variation of Fuel Standard</i> |
|---|----------------------------|------------|--|
| | <i>FROM</i> | <i>TO</i> | |
| Race Fuels Pty Ltd | 17/06/2009 | 31/12/2010 | Variation of the Fuel Standard (Petrol) Determination 2001 to permit the supply of petrol containing aromatics up to 54.9% v/v and/or MTBE up to 36.0% v/v and/or olefins up to 36.2% v/v and/or lead up to 1.65g/L and/or oxygen up to 18.0% m/m in petrol not containing ethanol. |
| IOR Energy Pty Ltd | 17/06/2009 | 31/12/2013 | Variation of approvals, adding two regulated persons to the 13 September 2007 and 20 November 2008 approvals (effective 1 January 2008 and 1 July 2009 respectively) to supply diesel containing up to 125 mg/kg sulphur |
| The National Biofuels Group Pty Ltd | 12/06/2009 | 01/03/2011 | Variation of approvals, adding three regulated persons to the 26 February 2009 (effective 1 March 2009) approval to supply biodiesel blends |
| Central State Fuels Pty Ltd, EnviroOil Co of Australia Pty Ltd | 04/06/2009 | 01/03/2011 | Variation of the Fuel Standard (Automotive Diesel) Determination 2001 to allow the supply of diesel with a biodiesel content of more than 5% but no greater than 20% v/v. |
| The National Biofuels Group Pty Ltd, Biodiesel Producers Ltd, Neumann Petroleum Pty Ltd, Gull Petroleum (WA) Pty Ltd, Smorgon Fuels Pty Ltd, North Queensland and Pacific Biodiesel Pty Ltd, Macquarie Oil Company, Freedom Fuels Terminalling Pty Ltd, The Biodiesel Station Pty Ltd, Australian Biodiesel Group Ltd, Future Fuels Australia Pty Limited, Southern Renewable Fuels Pty Ltd | 1/03/2009 | 1/03/2011 | Variation of the Fuel Standard (Automotive Diesel) Determination 2001, to allow the supply of diesel with a biodiesel content of more than 5% but no greater than 20% v/v. |
| Netaway Pty Ltd | 20/02/2009 | 31/12/2010 | Variation of the Fuel Standard (Petrol) Determination 2001, to permit the supply of petrol containing benzene up to 4.9% v/v; and/or ethanol up to 13% v/v; and/or lead up to 2.1g/L; and/or oxygen up to 3.5% m/m; in petrol not containing ethanol; and/or oxygen up to 4.5% m/m in petrol containing ethanol. |

Table 2: Approvals granted in 2008–09

| <i>Name of Approval Holder</i> | <i>Period of Operation</i> | | <i>Approved Variation of Fuel Standard</i> |
|--------------------------------------|----------------------------|------------|---|
| | <i>FROM</i> | <i>TO</i> | |
| ET Racing Fuels & Lubricants Pty Ltd | 20/02/2009 | 31/12/2010 | Variation of the Fuel Standard (Petrol) Determination 2001 to permit the supply of: leaded racing fuel (avgas) containing lead up to 0.85 g/L; and unleaded petrol containing aromatics up to 80% v/v; and/or benzene up to 5 % v/v; and/or DIPE up to 5% v/v; and/or ethanol up to 30% v/v; and/or MTBE up to 51% v/v; and/or olefins up to 40% v/v; and/or oxygen up to 12% m/m in petrol containing ethanol. |
| ACB Group Pty Ltd | 20/02/2009 | 31/12/2010 | Variation of the Fuel Standard (Petrol) Determination 2001, to permit the supply of: leaded racing fuel (avgas) containing lead up to 0.85 g/L; and unleaded petrol, containing aromatics up to 78% v/v; and/or ethanol up to 20% v/v; and/or oxygen up to 7.0% m/m in petrol containing ethanol. |
| Northern Dynamics Pty Ltd | 11/01/2009 | 31/12/2010 | Variation of the Fuel Standard (Petrol) Determination 2001, to permit the supply of leaded specialist racing fuel containing: MTBE up to 50.4% v/v; oxygen up to 11.6% m/m and lead up to 1.77 g/L. |
| Martini Racing Products Pty Ltd | 11/01/2009 | 31/12/2010 | Variation of the Fuel Standard (Petrol) Determination 2001, to permit the supply of specialist racing fuel containing aromatics up to 78% v/v. |
| Just Fuel Petroleum Service Pty Ltd | 11/01/2009 | 31/12/2010 | Variation of the Fuel Standard (Petrol) Determination 2001, to permit the supply of: leaded racing fuel (avgas) containing lead up to 0.9 g/L; and unleaded petrol containing ethanol up to 20% v/v; and/or oxygen up to 7.0% m/m. |
| The Shell Company of Australia Ltd | 9/01/2009 | 31/12/2009 | Variation of the Fuel Standard (Petrol) Determination 2001, to permit the supply of leaded racing fuel (avgas) containing lead up to 0.85 g/L. |
| Mobil Oil Australia Pty Ltd | 9/01/2009 | 31/12/2010 | Variation of the Fuel Standard (Petrol) Determination 2001, to permit the supply of leaded racing fuel (avgas) containing lead up to 0.85 g/L. |
| BP Australia Pty Ltd | 9/01/2009 | 31/12/2010 | Variation of the Fuel Standard (Petrol) Determination 2001, to permit the supply of leaded racing fuel (avgas) containing lead up to 0.85 g/L. |

Table 2: Approvals granted in 2008–09

| <i>Name of Approval Holder</i> | <i>Period of Operation</i> | | <i>Approved Variation of Fuel Standard</i> |
|--|----------------------------|------------|---|
| | <i>FROM</i> | <i>TO</i> | |
| Mobil Oil Australia Pty Ltd | 18/12/2008 | 28/02/2009 | Variation of the Fuel Standard (Automotive Diesel) Determination 2001, to allow the supply of diesel with a sulphur content of up to 35 mg/kg, where it has been supplied from fuel supply terminals at Port Lincoln, South Australia. |
| BP Australia Pty Ltd | 16/12/2008 | 30/06/2011 | Variation of the Fuel Standard (Automotive Diesel) Determination 2001, to allow the supply of diesel with a minimum density of not less than 810kg/m ³ . |
| Shell NZ Ltd | 15/12/2008 | 31/12/2010 | Variation of the Fuel Standard (Automotive Diesel) Determination 2001, to allow the supply of diesel with a sulphur content of up to 40 mg/kg, for use on the Cocos (Keeling) Islands. |
| Australian Government Attorney-General's Department | 15/12/2008 | 31/12/2010 | Variation of the Fuel Standard (Automotive Diesel) Determination 2001, to allow the supply of diesel with a sulphur content of up to 50 mg/kg, for use on Christmas Island. |
| VP Racing Fuels Pty Ltd | 15/12/2008 | 31/12/2010 | Variation of the Fuel Standard (Petrol) Determination 2001, to permit the supply of: leaded petrol containing any of the following: lead up to 1.72 g/L; MTBE up to 50% v/v; olefins up to 50% v/v; oxygen up to 14.57% m/m, in petrol containing ethanol; and oxygen up to 3.66% m/m, in petrol not containing ethanol; and unleaded petrol with any of the following: aromatics up to 48% v/v; MTBE up to 50% v/v; olefins up to 30% v/v; oxygen up to 9.37% m/m, in petrol containing ethanol; and oxygen up to 3.45% m/m, in petrol not containing ethanol. |
| Shell NZ Ltd | 15/12/2008 | 31/12/2010 | Variation of the Fuel Standard (Petrol) Determination 2001, to permit the supply of unleaded petrol containing any of the following: aromatics up to 53.6% v/v; DIPE up to 7.0% v/v; MTBE up to 15.1% v/v; and TBA up to 7.0% v/v. This approval also varies the Fuel Standard (Automotive Diesel) Determination 2001, to permit the supply of diesel racing fuel with any of the following parameters: density up to 860kg/m ³ ; flashpoint of 56 degrees C minimum; and viscosity up to 6.0cSt at 40 degrees C |

Table 2: Approvals granted in 2008–09

| <i>Name of Approval Holder</i> | <i>Period of Operation</i> | | <i>Approved Variation of Fuel Standard</i> |
|---|----------------------------|------------|---|
| | <i>FROM</i> | <i>TO</i> | |
| Race Fuels Pty Ltd | 15/12/2008 | 31/12/2010 | Variation of the Fuel Standard (Petrol) Determination 2001, to permit the supply of: leaded racing fuel (avgas) containing lead up to 0.6 g/L; and specialist racing fuel containing any of the following: aromatics up to 54.9% v/v; lead up to 1.5 g/L; MTBE up to 6.3% v/v; olefins up to 36.2% v/v; and oxygen up to 3.6% m/m in petrol not containing ethanol. |
| BP Australia Pty Ltd, Mobil Oil Australia Pty Ltd, The Shell Company of Australia Ltd | 1/02/2009 | 31/10/2010 | Variation of the Fuel Standard (Automotive Diesel) Determination 2001, to permit the supply of (wintermix) diesel with any of the following parameters: viscosity 1.4 to 2.0 cSt @ 40°C; density 810 to 820kg/m ³ ; lubricity 0.460 to 0.550mm max. |
| IOR Energy Pty Ltd | 1/07/2009 | 31/12/2013 | Variation of the Fuel Standard (Automotive Diesel) Determination 2001, to allow the supply of diesel with a sulphur content of up to 125 mg/kg (Eromanga Underground Mining Fuel), for underground mining applications only. |
| IOR Energy Pty Ltd | 20/11/2008 | 30/06/2011 | Variation of the Fuel Standard (Automotive Diesel) Determination 2001, to allow the supply of diesel with a sulphur content of up to 50 mg/kg, for contracted commercial supply applications. |

Monitoring and Compliance

The Australian Government runs a fuel sampling program to monitor the quality of fuels sold in Australia. Fuel samples of all grades of fuel covered by the standards are taken throughout the fuel supply chain, in all states and territories. The monitoring program aims to take representative samples in each of the fuel markets around Australia, and respond to complaints made by consumers about fuel.

Fuel sampling is undertaken at distribution terminals, depots, service stations and other outlets. Samples are screened for compliance with the standards and, if required, are further tested at an independent laboratory accredited by the National Association of Testing Authorities. Testing methods are accredited to international standards.

Fuel quality inspectors directly employed by the department, and by some state and territory agencies, took 3825 petrol, diesel, biodiesel and autogas samples during 2008–09, from around 1123 sites across Australia. A total of 268 fuel quality compliance incident reports were received from consumers. In comparison, 4214 samples were taken during 2007–08, from 1300 sites, and 230 compliance incidents were reported.

Test results indicate a high level of compliance with the fuel standards. Where non-compliance with a standard is detected, further investigation is undertaken, with a view to prosecution where an offence can reasonably be proven.

On 2 March 2009, the New South Wales Magistrates Court convicted and fined Prime Fuel Distributors, trading as Speedway Meadows and Speedway Mount Pritchard, for nine offences against the Act. The court ordered the defendant to pay \$121,000 in fines. The offences involved the company's failure to properly label petrol pumps supplying ethanol blends and for supplying diesel that failed to meet the diesel standard.

Federal Court injunction proceedings were finalised on 20 November 2008, against Jarpab Pty Ltd, trading as the Big Prawn, for supplying diesel that failed to meet Australia's national fuel quality standards. The respondent gave an undertaking not to supply or sell diesel contrary to the Fuel Standard (Automotive Diesel) Determination. The undertaking was noted in a court order and costs were awarded to the Commonwealth.

Audits of the terms and conditions of approvals to vary fuel standards under section 13 of the FQS Act, are also conducted by fuel quality inspectors. During 2008–09, 10 audits were completed. The results indicate a generally high level of compliance.

Freedom of information

No freedom of information requests were received in relation to the FQS Act and Regulations.